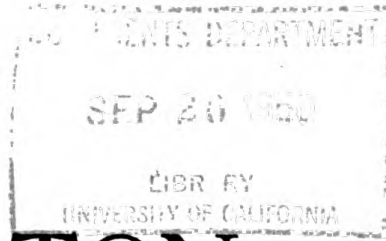


✓
TM 9-883

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

✓
1/464
U113
TM 9:883



**1-TON
2-WHEEL CARGO
AND
WATER TRAILERS**

15 **DEPARTMENT OF THE ARMY • AUGUST 1943**

US.

TM 9-883

This TM supersedes TM 9-883A, 12 March 1943

1-TON 2-WHEEL CARGO AND WATER TRAILERS



DEPARTMENT OF THE ARMY • AUGUST 1943

*United States Government Printing Office
Washington : 1950*

WAR DEPARTMENT

Washington 25, D. C., 27 August 1943

TM 9-883, 1-Ton, 2-Wheel Cargo and Water Trailers is published for the information and guidance of all concerned.

[A.G. 300.7 (29 Jun 43)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
*Major General,
The Adjutant General.*

DISTRIBUTION: R 9 (4); IR 5 (2); Bn 9 (2); IBn 5 (3); C 9 (8);
IC 3, 5, and 17 (2).

(For explanation of symbols, see FM 21-6)

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

U113
.2

CONTENTS

TM 9-883

Aug 1943

PART I—VEHICLE OPERATING INSTRUCTIONS

SECTION		Paragraphs	Pages
I.	Introduction	1	2
II.	Description and Tabulated Data.....	2-4	3-12
III.	Controls and Operation.....	5-7	13-14
IV.	Operation Under Unusual Conditions..	8	15
V.	Inspection and Preventive Maintenance Services	9-13	16-21
VI.	Lubrication	14-15	22-23

PART II—VEHICLE MAINTENANCE INSTRUCTIONS

VII.	Maintenance Allocation.....	16-17	24-30
VIII.	Organizational Preventive Maintenance Services	18	31-37
IX.	Trouble Shooting.....	19-24	38-42
X.	Body and Frame Assembly.....	25-27	43-55
XI.	Drawbar and Parking Wheel.....	28-34	56-60
XII.	Lighting System.....	35-45	61-66
XIII.	Tires, Wheels, Hubs, and Wheel bearings	46-53	67-73
XIV.	Parking Brakes.....	54-59	74-79
XV.	Axle and Springs.....	60-64	80-83
REFERENCES			84-85
INDEX			86

*This manual supersedes TM 9-883A, 12 March 1943.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

PART ONE—VEHICLE OPERATING INSTRUCTIONS

Section I

INTRODUCTION

Scope	Paragraph 1
-------------	-------------

1. SCOPE.

a. This technical manual is published for the information and guidance to personnel of the using arms charged with the operation, maintenance and minor repairs of this materiel.

b. In addition to a description of the all-steel cargo, wood body cargo and water trailers, this manual contains technical information required for the identification, use and care of the materiel. The manual is divided in two parts. Part One, Sections I to VI, inclusive, Paragraphs 1 to 15, inclusive, gives vehicle operating instructions. Part Two, Sections VII to XV, inclusive, Paragraphs 16 to 64, inclusive, gives vehicle maintenance instructions to using arm personnel charged with the responsibility of doing maintenance work within their jurisdiction.

c. In all cases where the nature of the repair, modification or adjustment is beyond the scope or facilities of the unit, the responsible ordnance service should be informed so that trained personnel with suitable tools and equipment may be provided or proper instructions issued.

Section II

DESCRIPTION AND TABULATED DATA

	Paragraph
Description	2
Differences among models	3
Data	4

2. DESCRIPTION.

a. This two-wheeled, rubber-tired vehicle is designed to carry varied types of loads not exceeding 2,000 pounds evenly distributed over the floor, for the cargo trailer, and to carry 250 gallons of drinking water for the water trailer. The trailer has a drawbar which is supported by a retractable parking wheel when the trailer is uncoupled. The parking wheel is attached by a pivot bolt to the drawbar, and swings up or down. A spring latch secures it in both the up or down position. The frame is carried on a one-piece axle through semi-elliptical spring suspension. The centers of the springs are held to the axle by means of plate and bolt assemblies. The front ends of the springs are supported by stationary brackets. The rear ends of the springs ride in shackles held in brackets mounted to the body. Volute bumper spring assemblies are mounted on the under side of the body above the center of the main spring bumper plates. Two combination service and blackout taillights and stop lights are installed on the rear end and controlled by a switch at the left side of the trailer. The wheels are equipped with brakes which are operated by a hand lever located on the right side of the trailer near the rear of the body. These brakes are to be used for parking purposes only. The trailer has a lunette eye on its drawbar with a two-stage adjustment for height, which can be coupled to any towing vehicle equipped with a standard Army pintle hitch.

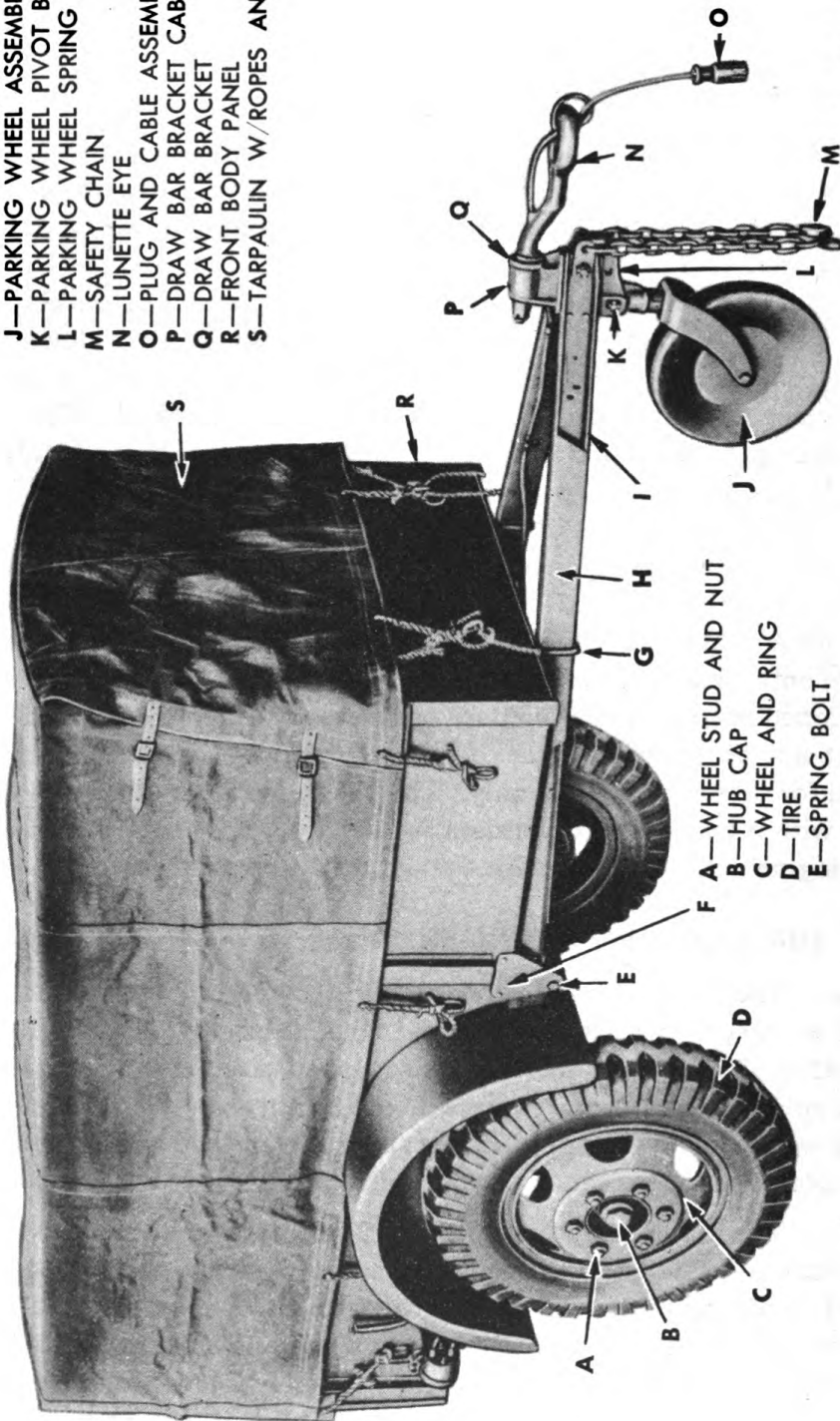
3. DIFFERENCES AMONG MODELS.

a. The all-steel body cargo trailer is made up of formed sheet steel, and is integral with the fabricated steel frame, all parts being welded together. The rear of the body is equipped with a hinged steel tail gate. The side panels are each equipped with removable wood side racks, along with wood end racks and wood roof slats. A tarpaulin with ropes and straps completely encloses the upper part of the body (figs. 1, 2 and 3).

b. The wood body cargo trailer is a combination of wood and steel fabrication. The body proper is made up of wood, bolted together with steel reinforcements, and is integral with the steel subframe. The rear of the body is equipped with a hinged wood-and-steel fabricated tail gate. The side panels are each equipped with removable wood side racks, along with wood end racks and wood roof slats. A tarpaulin with ropes and straps completely encloses the upper part of the body (figs. 4, 5 and 6).

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

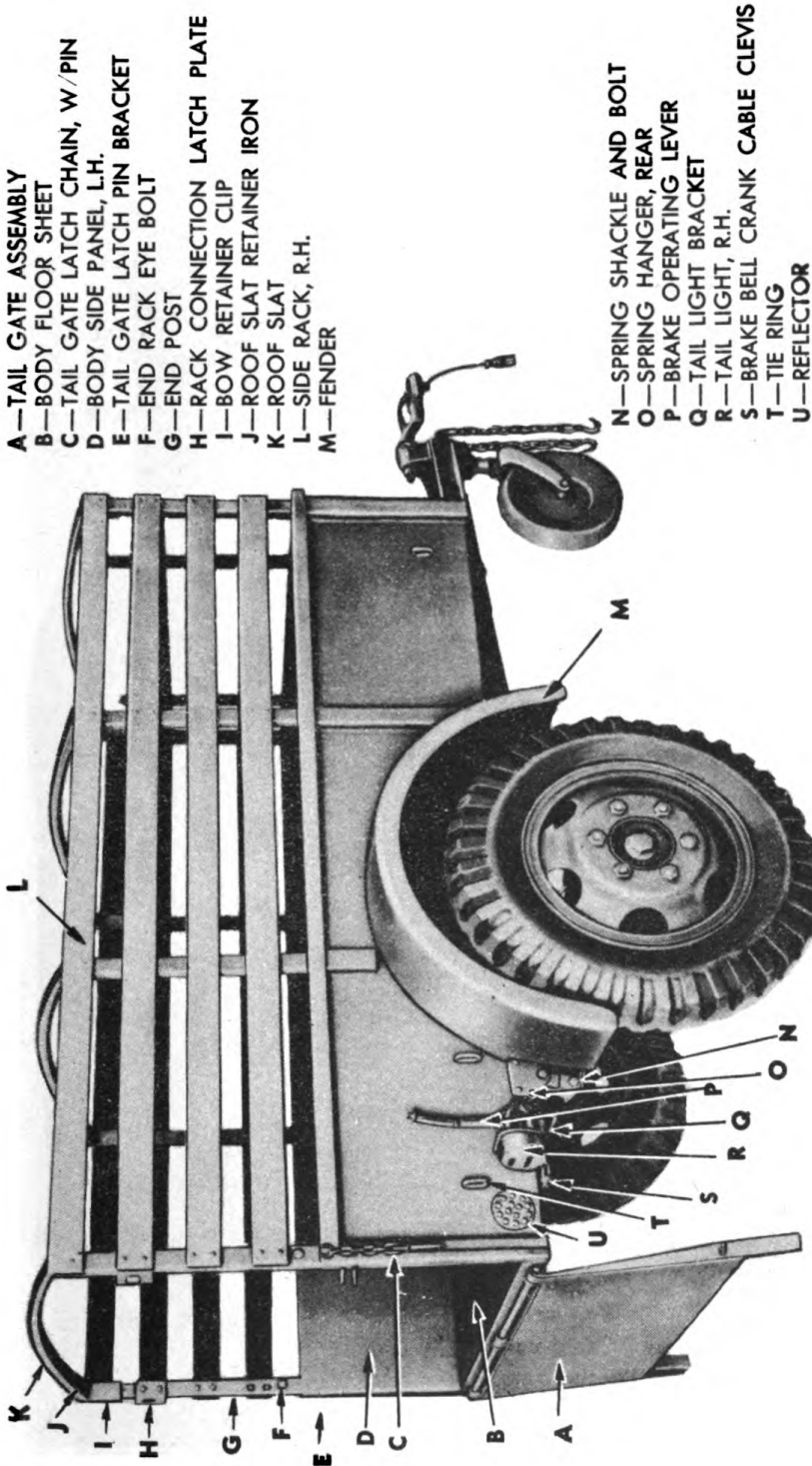
- F—SPRING BRACKET FRONT
- G—U-BOLT TO BODY
- H—DRAW BAR RAIL REINFORCEMENT
- I—DRAW BAR RAIL, R.H.
- J—PARKING WHEEL ASSEMBLY
- K—PARKING WHEEL PIVOT BOLT
- L—PARKING WHEEL SPRING LATCH
- M—SAFETY CHAIN
- N—LUNETTE EYE
- O—PLUG AND CABLE ASSEMBLY
- P—DRAW BAR BRACKET CABLE CLIP
- Q—DRAW BAR BRACKET
- R—FRONT BODY PANEL
- S—TARPAULIN W/ROPES AND STRAPS



RA PD 310176

Figure 1—Steel Body Cargo Trailer—Right Front View With Tarpaulin

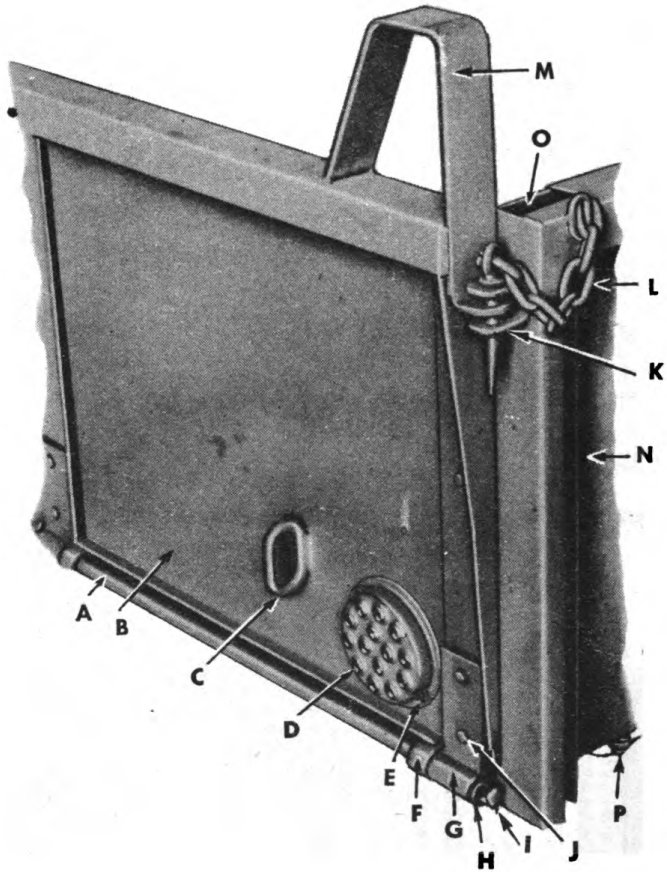
DESCRIPTION AND TABULATED DATA



RA PD 310177

Figure 2—Steel Body Cargo Trailer—Right Rear View Without Tarpaulin

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



- A—TAIL GATE HINGE ROD
- B—TAIL GATE PANEL
- C—TIE RING (WELDED)
- D—RED REFLECTOR
- E—SCREW AND NUT
- F—ROD EYE BOLT
- G—STRAP HINGE
- H—WASHER
- I—COTTER PIN
- J—HINGE STRAP RIVET
HINGE WELDED ON
SOME MODELS
- K—TAIL GATE PIN BRACKET
(WELDED TO BODY)

- L—CHAIN, W/LATCH PIN
(WELDED TO BODY)
- M—TAIL GATE LEG (WELDED)
- N—SIDE PANEL, R.H.
- O—SIDE PANEL STAKE POCKET (REAR)
- P—BRAKE BELL CRANK LEVER

RA PD 310178

Figure 3—Steel Body Cargo Trailer—Tail Gate and Rear Body Corner

DESCRIPTION AND TABULATED DATA

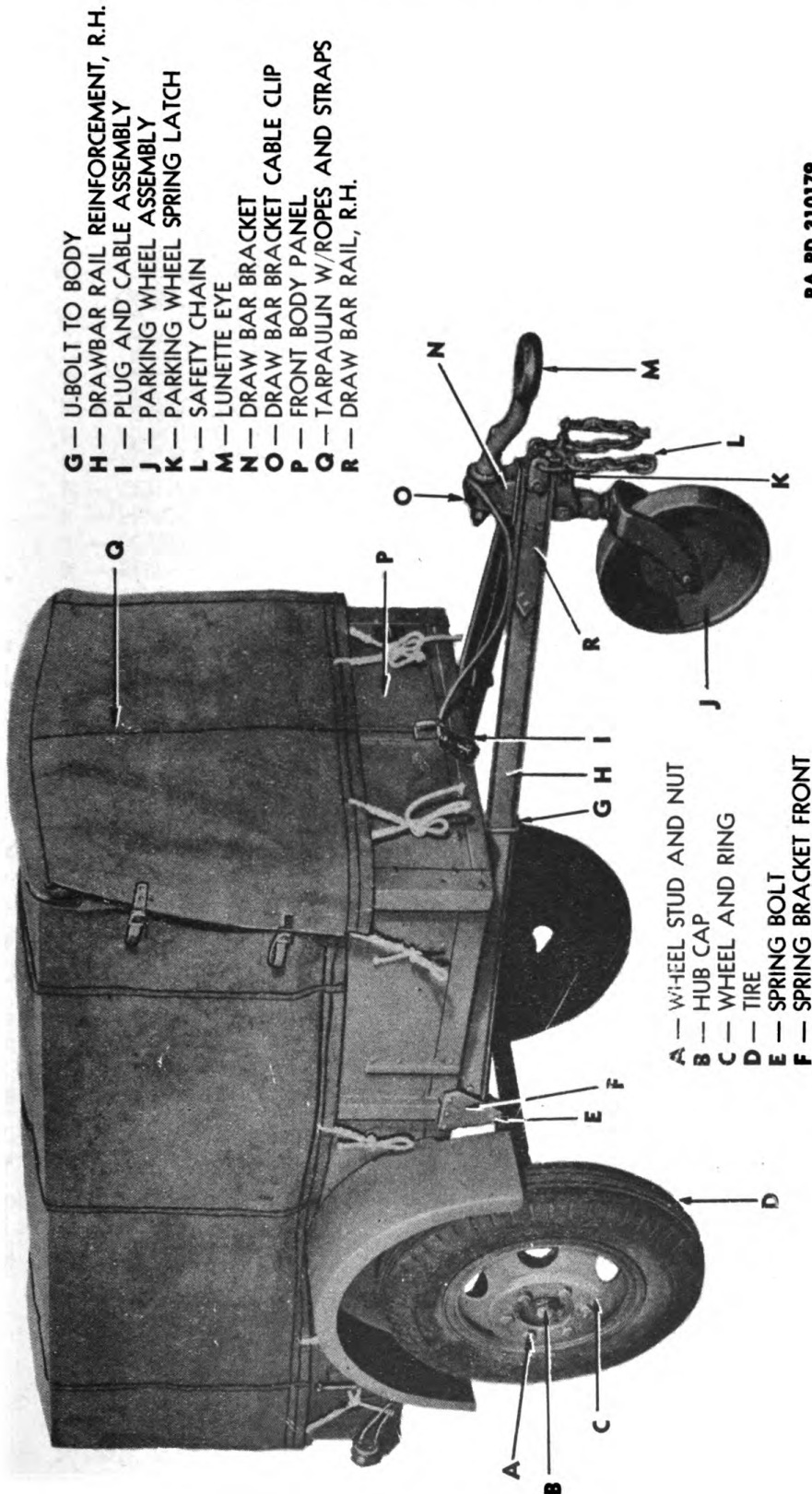
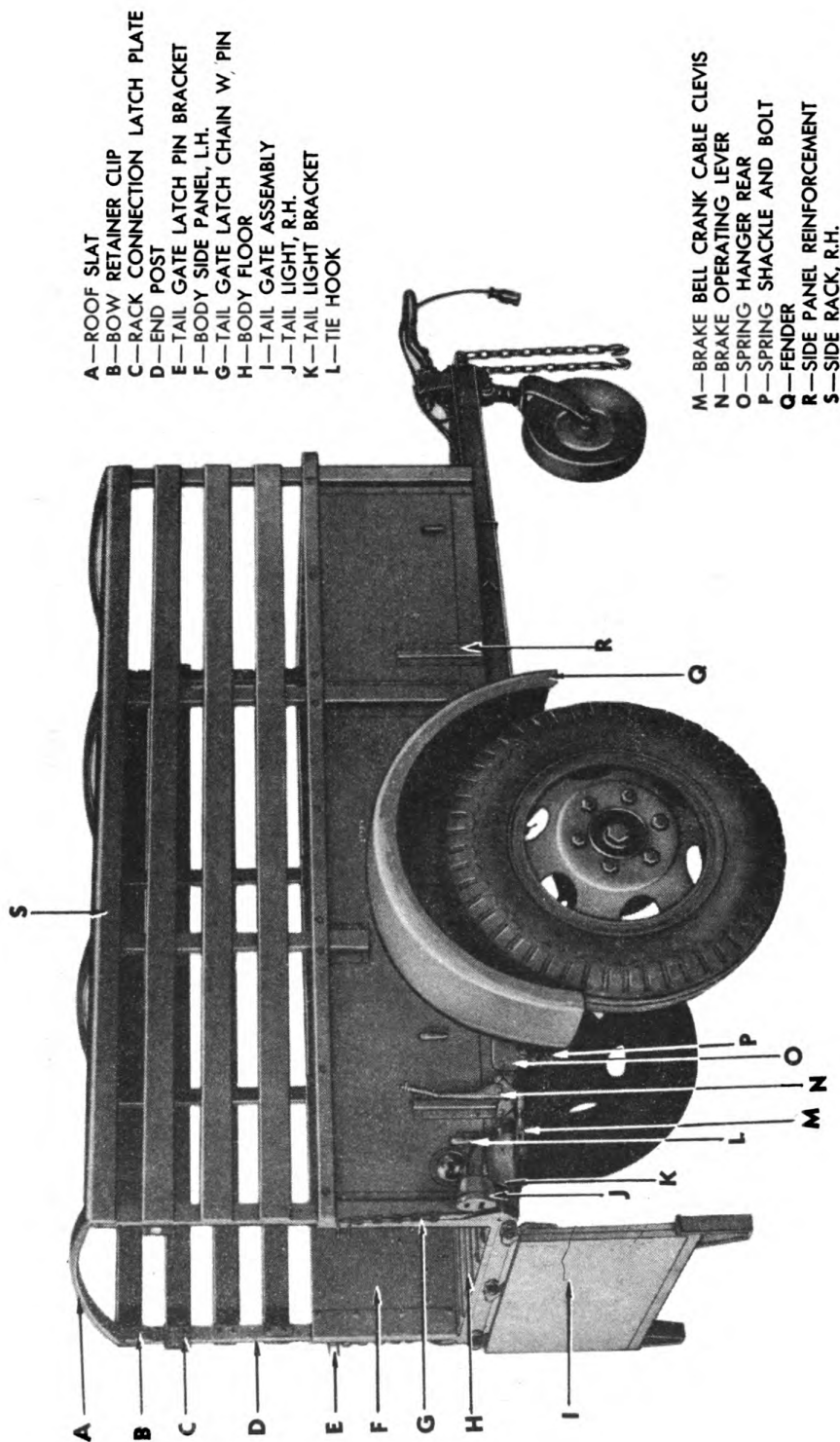


Figure 4—Wood Body Cargo Trailer—Right Front View With Tarpaulin

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 310180

Figure 5—Wood Body Cargo Trailer—Right Rear View Without Tarpaulin

DESCRIPTION AND TABULATED DATA

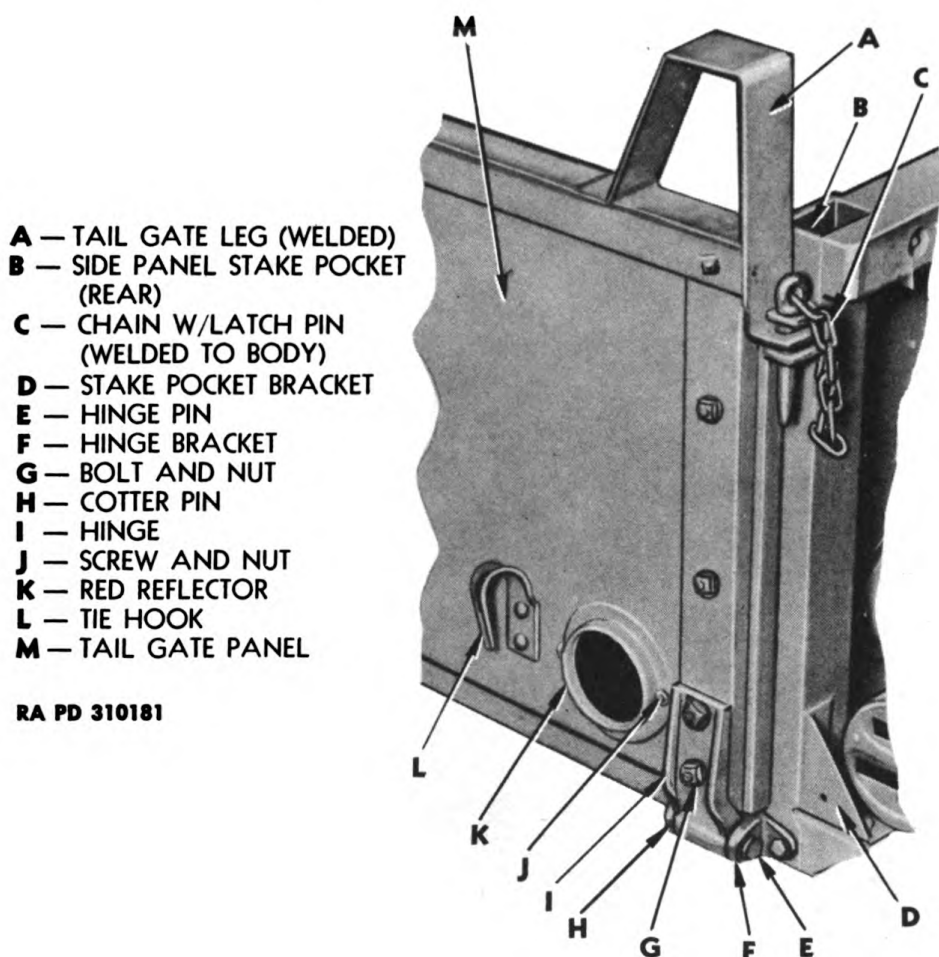


Figure 6—Wood Body Cargo Trailer—Tail Gate and Rear Body Corner

c. The 250-gallon water trailer has an elliptical steel tank with a manhole on the top, and is welded to the fabricated steel frame. A hand-operated pump is mounted at the front end of the tank, to which is attached a 25-foot length of suction hose and a bell strainer. A faucet box is mounted at each side of the trailer at the front (figs. 7 and 8).

4. DATA.

a. Vehicle Specifications (Cargo Trailers).

Length, over-all	145½ in.
Length, inside	96 in.
Width, over-all	71⅛ in.
Width, inside	46¼ in.
Height, over-all	73 in.
(Reducible to 46½ in.)	

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

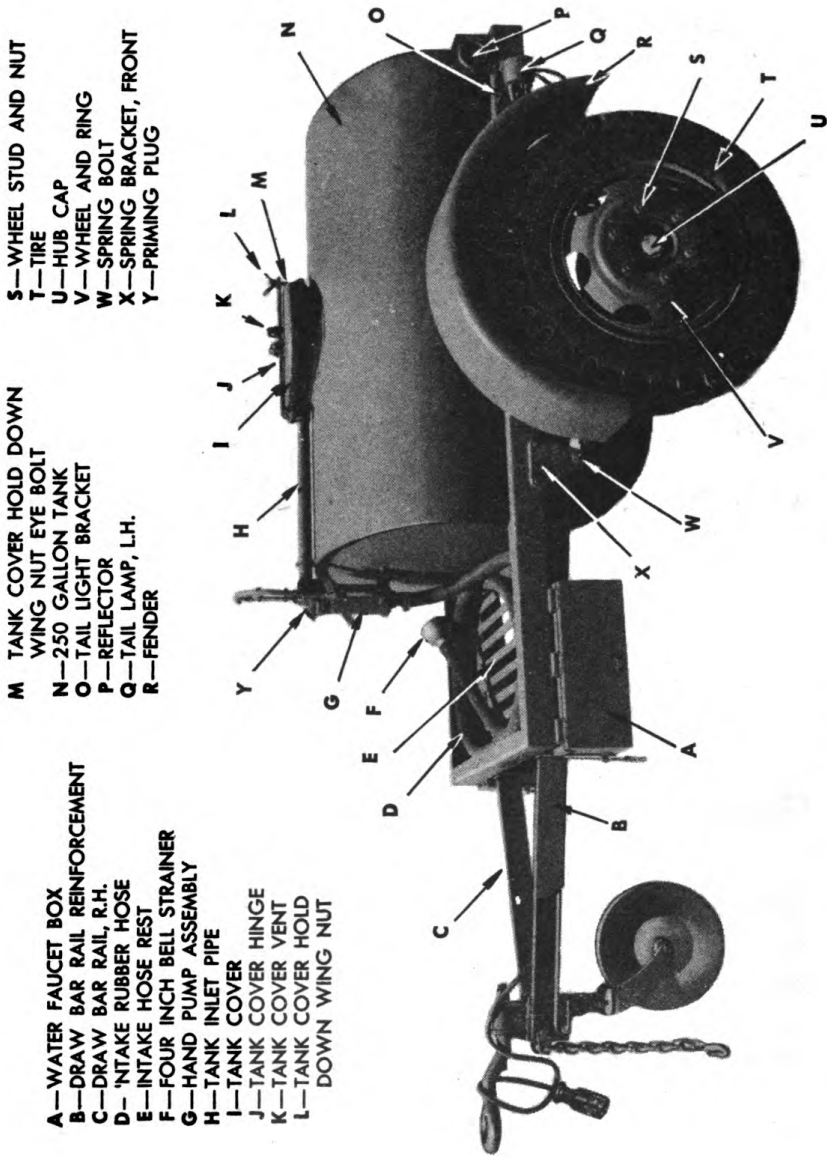


Figure 7—Water Tank Trailer—Left Front View

RA PD 310182

DESCRIPTION AND TABULATED DATA

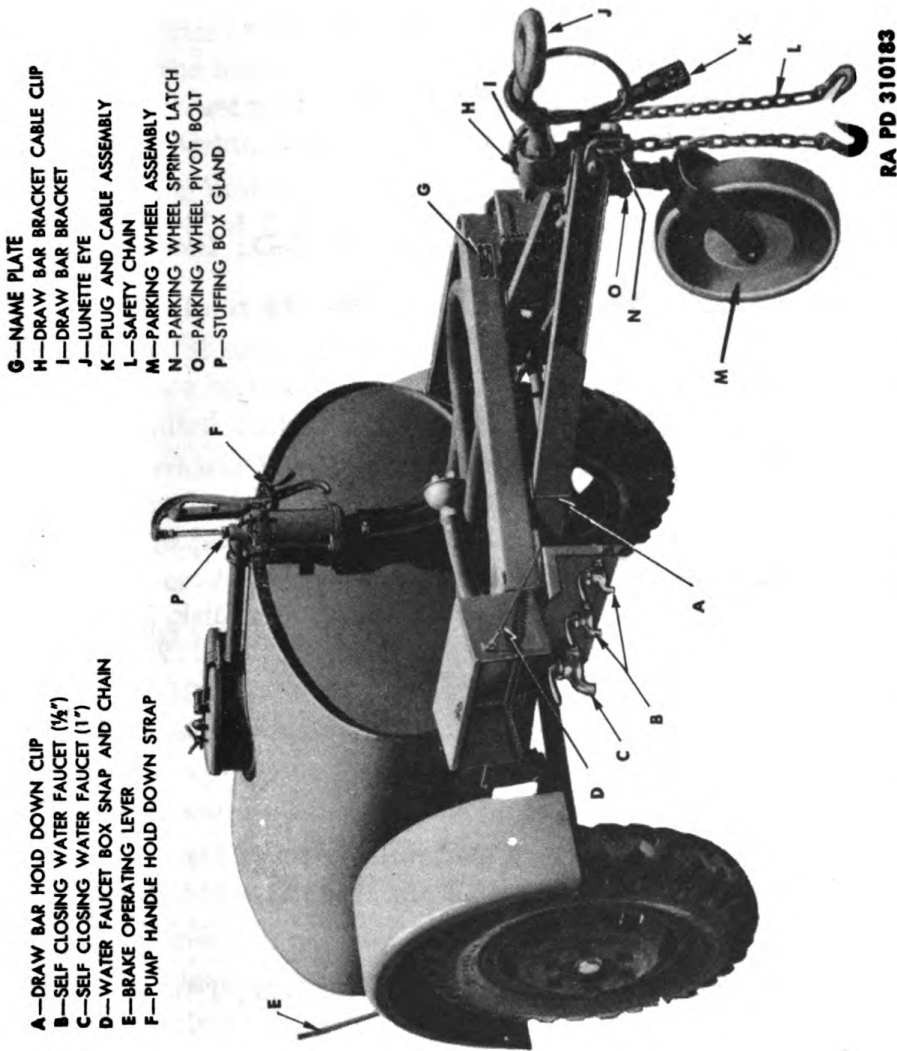


Figure 8—Water Tank Trailer—Right Front View

Height, inside (to top of side panels)	18 in.
Height, inside (to top bows)	43 ⁵ / ₈ in.
Wheel type and size	Ventilated disk—20 x 7 in.
Tire size	7.50 x 20
Tire type	8-ply
Tire pressure	55 lb
Track at ground	59 in.
Weight of vehicle, empty (steel body trailer)	1300 lb
(wood body trailer)	1300 lb
Weight of vehicle, loaded (steel body trailer)	3300 lb
(wood body trailer)	3300 lb
Ground pressure, lb per sq in.	41 lb
Ground clearance, under axle bolts	15 in.
Lunette eye height—in low position	26 in.
Lunette eye dimensions—3 ³ / ₃₂ in. I.D.; 6 ¹ / ₂ in. O.D.; 1 ¹¹ / ₁₆ in. thick.	

Length, over-all	136½ in.
Width, over-all	71⅛ in.
Height, over-all	62 in.
Size of elliptical water tank (small diameter)	28½ in.
(large diameter)	46 in.
Length of tank shell	60 in.
Water tank capacity	250 gal
Wheel type and size	Ventilated disk, 20 x 7 in.
Tire size	7.50 x 20
Tire type	8-ply
Tire pressure	55 lb
Track at ground	59 in.
Weight of vehicle, empty	1500 lb
Weight of vehicle, loaded	3500 lb
Ground pressure, lb per sq in.	44 lb
Ground clearance, under axle bolts	15 in.
Lunette eye height—in low position	26 in.
Lunette eye dimensions—3⅞ in. I.D.; 6½ in. O.D.; 1⅞ in. thick	

Approach angle, degrees	50
Departure angle, degrees (cargo trailer)	40
(water trailer)	50
Fording depth (cargo trailer body floor)	28 in.
(water trailer faucet box)	20 in.
Towing facilities, front	Lunette eye

Section III

CONTROLS AND OPERATION

	Paragraph
General information on controls	5
Trailer operation	6
Loading	7

5. GENERAL INFORMATION ON CONTROLS.

a. Parking Brake. The parking brake lever is located on the right side of the trailer near the rear of the body. The brake should be applied whenever the trailer is disconnected from the towing vehicle whether on a slope or on level ground. The brake should never be used for any purpose other than parking and must be released before the trailer is moved.

b. Plug and Cable. The taillights are lighted by inserting cable plug, located at front of trailer, into receptacle on the towing vehicle (O, fig. 1).

c. Blackout Switch. The trailer is equipped with both service and blackout taillights and stop lights. The lights can be changed instantly from service to blackout, and from blackout to service, by turning the switch located on left side of trailer near the rear of the body.

d. Parking Wheel. The parking wheel is located on the drawbar bracket casting to the rear of the lunette. It can be raised for towing, or lowered for parking, by pulling out the plunger and swinging the wheel either up or down.

6. TRAILER OPERATION.**a. Coupling Trailer to Towing Vehicle.**

(1) Secure lunette of trailer to pintle hitch on rear of the towing vehicle.

(2) Hook the safety chains on the trailer to the towing vehicle.

(3) Insert electric cable plug into receptacle on the towing vehicle, and test the operation of the lights.

(4) Raise the parking wheel of the trailer, making sure that fork is properly engaged in rest clip.

(5) Release parking brake by moving lever toward front of the trailer. This is important since breakage may result if brakes are locked when trailer is pulled by towing vehicle.

b. Driving Truck and Trailer.

(1) When turning corners, care should be taken to allow for the fact that the trailer rear wheels turn inside the turning radius of the towing vehicle.

(2) When backing, the towing vehicle should be steered in the opposite direction to which it is desired that the trailer be turned.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS**c. Uncoupling Trailer from Towing Vehicle.**

- (1) Set the hand brake on trailer by moving lever toward rear of trailer.
- (2) Pull out plunger at left side of drawbar bracket and lower the parking wheel. Release plunger and make sure plunger is engaged in hole in quadrant.
- (3) Disconnect the electric cable plug from the receptacle on towing vehicle.
- (4) Unhook the safety chains of the trailer from the towing vehicle.
- (5) Uncouple the drawbar lunette from the pintle of the towing vehicle.
- (6) Drive the towing vehicle away.

d. Tarpaulin Installation.

- (1) Place tarpaulin over wood racks, being sure to place end stenciled **FRONT** at front of trailer.
- (2) Fasten tie ropes to four tie loops on each side of body and two on front and rear.
- (3) Fasten end flap straps securely in place.

7. LOADING.

a. Cargo Trailer. Capacity of load is 2,000 pounds. When the trailer is loaded, care must be taken to distribute load equally over entire floor of the trailer. Too much weight at the rear may result in tipping the trailer over backwards. Too much weight at the front will make it difficult to attach trailer to the towing vehicle.

b. Water Trailer. The capacity of the water tank is 250 gallons of water, which weighs 2,000 pounds. When the trailer is loaded, care must be taken to have it setting level unless it is coupled to a towing vehicle. If the front end of the trailer is raised too high, the rear end will hang down, and result in the trailer tipping over backward.

Section IV

OPERATION UNDER UNUSUAL CONDITIONS

Operation under unusual conditions.....	Paragraph 8
---	----------------

8. OPERATION UNDER UNUSUAL CONDITIONS.

a. Extreme Heat and Cold.

(1) **CARGO TRAILER.** No special preparations are necessary for operation under extreme heat and cold for cargo trailers, other than the proper use of lubricants. For proper lubrication under these conditions, refer to section VI.

(2) **WATER TRAILER.** Water trailers are not designed to be used in freezing temperatures because no provision for keeping drinking water from freezing has been made.

b. **Sand or Dust.** Operation in extremely sandy or dusty conditions necessitates frequent inspection, cleaning and lubrication of the trailer working parts.

(1) **WATER TRAILER.** On the water trailer, the manhole cover should be kept closed and held down tightly with the wing nut, except when tank is being filled through this cover. The cover on the bell strainer at the end of the intake hose should be kept closed, except when filling the tank with the hand pump. The water faucet box covers should be kept closed and locked with snap, except when drawing water from the faucets.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section V

INSPECTION AND PREVENTIVE MAINTENANCE SERVICES

	Paragraph
Purpose	9
Before operation service	10
During operation service	11
At halt service	12
After operation and weekly service	13

9. PURPOSE.

a. To ensure mechanical efficiency, it is necessary that the vehicle be systematically inspected at intervals each day it is operated, also weekly, so that defects may be discovered and corrected before they result in serious damage or failure. Certain scheduled maintenance services will be performed at these designated intervals. The services set forth in this section are those performed by driver or crew, before operation, during operation, at halt and after operation and weekly.

b. Driver preventive maintenance services are listed on the back of "Driver's Trip Ticket and Preventive Maintenance Service Record," WD Form No. 48, to cover vehicles of all types and models. Items peculiar to specific vehicles, but not listed on WD Form No. 48, are covered in manual procedures under the items with which they are related. Certain items listed on the form that do not pertain to the vehicle involved are eliminated from the procedures as written into the manual. Every organization must thoroughly school each driver in performing the maintenance procedures set forth in manuals, whether or not they are listed specifically on WD Form No. 48.

c. The items listed on WD Form No. 48 that apply to this vehicle are expanded in this manual to provide specific procedures for accomplishment of the inspections and services. These services are arranged to facilitate inspection and conserve the time of the driver, and are not necessarily in the same numerical order as shown on WD Form No. 48. The item numbers, however, are identical with those shown on that form.

d. The general inspection of each item applies also to any supporting member or connection, and generally includes a check to see whether the item is in good condition, correctly assembled, secure, or excessively worn.

e. The inspection for "good condition" is usually an external visual inspection, to determine whether the unit is damaged beyond safe or serviceable limits. The term "good condition" is explained further by the following terms: not bent or twisted, not chafed or burned, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut.

INSPECTION AND PREVENTIVE MAINTENANCE SERVICES

f. The inspection of a unit to see that it is "correctly assembled" is usually an external visual inspection, to see whether it is in its normal assembled position in the vehicle.

g. The inspection of a unit to determine if it is "secure" is usually an external visual examination, a hand-feel, or a pry-bar check for looseness. Such an inspection should include any brackets, lock washers, lock nuts, locking wires, or cotter pins used in assembly.

h. "Excessively worn" will be understood to mean worn close to, or beyond, serviceable limits, and is likely to result in a failure if not replaced before the next scheduled inspection.

i. Any defects or unsatisfactory operating characteristics beyond the scope of first echelon to correct must be reported at the earliest opportunity to the designated individual in authority.

10. BEFORE-OPERATION SERVICE.

a. This inspection schedule is designed primarily as a check to see that the vehicle has not been tampered with or sabotaged since the after-operation service was performed. Various combat conditions may have rendered the vehicle unsafe for operation, and it is the duty of the driver to determine whether or not the vehicle is in condition to carry out any mission to which it may be assigned. This operation will not be entirely omitted, even in extreme tactical situations.

b. **Procedures.** Before-operation service consists of inspecting items listed below according to the procedure described, and correcting or reporting any deficiencies. Upon completion of the service, results should be reported promptly to the designated individual in authority.

(1) **ITEM 1, TAMPERING AND DAMAGE.** Look for any injury to trailer or hitch, accessories, and equipment in general which may have resulted from tampering or sabotage, collision, falling debris, or shell fire since last parked.

(2) **ITEM 12, LAMPS AND REFLECTORS.** If tactical situation permits, turn on all switches and see that all lamps light. See that lamps and warning reflectors are secure and that lenses are clean and not broken.

(3) **ITEM 13, WHEEL NUTS.** Inspect to see that they are in good condition, present, and secure.

(4) **ITEM 14, TIRES.** Inspect tires visually for cuts and breaks. Remove stones wedged in treads, embedded glass, nails, or other objects from treads and carcass. Test tire pressure, and if under 55 pounds, inflate to this pressure.

(5) **ITEM 17, FENDERS.** Inspect for damage and looseness.

(6) **ITEM 18, TOWING CONNECTIONS.** Observe drawbar assembly to see that it is properly assembled and fastened to frame. Inspect lunette

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

eye to see that it is in good condition for attaching to pintle. Be sure parking wheel locks securely and that safety chains are complete and secured to both trailer and towing vehicle. Push plug of trailer wiring securely into socket on towing vehicle.

(7) **ITEM 19, BODY, LOAD, AND TARPS.** Examine body, racks, and roof slats for damage. Inspect load for shifting and proper stowing. Inspect tarp for security and damage. Inspect tail gate to see that hinge is in proper working order, and that fastening chains are present and in good condition. If the vehicle is equipped with a 250-gallon tank body, inspect tank to see that there is no separation of tank from frame at welded joint, and that manhole cover locks securely.

c. **Additional Procedures for 250-gallon Tank Trailer.** The following procedures are to be performed in addition to, and after, those listed above.

(1) **ITEM 6, LEAKS, GENERAL.** Inspect tank, valves, and fittings for leaks. If valves leak around valve stem, tighten packing nut until leak is stopped, using care not to tighten nut too tight so as to score valve stem.

(2) **ITEM 21, EQUIPMENT.** Inspect loading pump and test it to see that it is in working condition. If seepage is noted around packing gland on piston rod when testing, tighten packing nut, using care not to get it too tight, as the rod may be scored. Inspect the intake hose for cuts or breaks; inspect strainer on intake end to see if it is present, in good condition, and clean.

(3) **ITEM 25, DURING-OPERATION CHECK.** The during-operation services should start immediately after the vehicle is put in motion, in the nature of a road test.

11. DURING-OPERATION SERVICE.

a. While vehicle is in motion, listen for any sounds such as rattles, knocks, squeals, or hums that may indicate trouble. Any time the brakes are used, or vehicle turned, consider this a test, and notice any unsatisfactory or unusual performance.

b. **Procedures.** During-operation services consist of observing items listed below according to the procedures following each item, and investigating any indications of serious trouble. Notice minor deficiencies to be corrected or reported at earliest opportunity, usually next scheduled halt.

(1) **ITEM 35, TRAILER.** Be on alert for any abnormal performance that might be caused by a flat tire, dragging brakes, unhitching of pintle and lunette eye, loosening of tow bar from body of trailer, shifting of load, sagging or tilting, loose top tarpaulin or curtains, or weaving of towed load.

INSPECTION AND PREVENTIVE MAINTENANCE SERVICES**12. AT-HALT SERVICE.**

a. At-halt services may be regarded as minimum maintenance procedures and should be performed under all tactical conditions, even though more extensive maintenance services must be slighted or omitted altogether.

b. **Procedures.** At-halt services consist of investigating any deficiencies noted during operation, inspecting items listed below according to the procedures following the items, and correcting any deficiencies found. Deficiencies not corrected should be reported promptly to the designated individual in authority.

(1) **ITEM 39, TEMPERATURES, HUBS, AND BRAKE DRUMS.** Feel these assemblies for abnormal temperatures. A hot brake drum indicates a dragging brake shoe; a hot hub indicates a damaged, improperly adjusted, or inadequately lubricated wheel bearing. A cold drum may indicate an inoperative brake.

(2) **ITEM 42, SPRINGS AND SUSPENSIONS.** Observe springs for broken or shifted leaves; the latter condition indicates broken spring bolt or rebound clips. Inspect U-bolts and shackle bolts for tightness and damage.

(3) **ITEM 44, WHEEL NUTS.** Inspect wheels and rims to see that they are not damaged, and nuts attaching wheels to hubs to see that all are present and secure.

(4) **ITEM 45, TIRES.** Examine tires for damage and under-inflation, and remove stones and embedded objects from treads and carcass.

(5) **ITEM 49, FENDERS.** Inspect fenders for damage and looseness.

(6) **ITEM 50, TOWING CONNECTIONS.** Inspect drawbar assembly to see that it is properly fastened to the frame. Inspect lunette eye to see that it is in good condition for attaching to the pintle. Be sure parking wheel locks securely in towing position and is kept in this position by pin and antiswing bracket. Inspect safety chains to see that they are complete and secured to both trailer and towing vehicle. Push plug of trailer wiring securely into socket of towing vehicle.

(7) **ITEM 51, BODY, LOAD, AND TARP.** Inspect body for damage, load for shifting and proper stowing, tarp for damage and correct fastening. If the vehicle is equipped with a 250-gallon tank, inspect tank in general for damage and security of mountings. Pay particular attention for separation at weld joint between tank and frame, and see that manhole cover is closed and locked securely.

c. **Additional Procedures for 250-gallon Tank Trailer.** The following procedures are to be performed in addition to, and after those listed above:

(1) **ITEM 46, LEAKS, GENERAL.** Inspect the tank, valves, and fittings for leaks.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS**13. AFTER-OPERATION AND WEEKLY SERVICE.**

a. After-operation servicing is particularly important, because at this time, the driver inspects vehicle to detect any deficiencies that may have developed and corrects those he is permitted to handle. He should report promptly, to the designated individual in authority, the results of his inspection. If this schedule is performed thoroughly, the vehicle should be ready to roll again on a moment's notice. The before-operation service, with a few exceptions, is then necessary only to ascertain whether the vehicle is in the same condition in which it was left upon completion of the after-operation service. The after-operation service should never be entirely omitted even in extreme tactical situations, but may be reduced to the bare fundamental services outlined for the at-halt service, if necessary.

b. **Procedures.** When performing the after-operation service the driver must remember and consider any irregularities noticed during the day in the before-operation, during-operation, and at-halt services. The after-operation service consists of inspecting and servicing the following items. Those items of the after-operation service that are marked by an asterisk (*) require additional weekly services, the procedures for which are indicated in step (b) of each applicable item.

(1) **ITEM 59, LAMPS AND REFLECTORS.** Test all lights, if tactical situation permits. Clean lenses and warning reflectors, and examine for damage and security of mountings.

(2) **ITEM 64, ELECTRICAL WIRING.** Inspect wiring for breaks, broken insulation or bare wire, looseness of fastening on the frame, and good connections at junction block and switch. Inspect switch to see that it is in good condition, operating satisfactorily, and secure.

(3) **ITEM 68, *TIRES.**

(a) Inspect tires for cuts or breaks. Remove stones, glass, nails, or other objects embedded in treads or carcass. Test tire pressures, and if under 55 pounds, inflate to this pressure. If tire is warm, pressure may exceed 55 pounds. After tire is cool, recheck pressure before releasing any air from the tire.

(b) *Weekly.* Replace damaged or excessively worn tires.

(4) **ITEM 69, *SPRINGS AND SUSPENSIONS.**

(a) Inspect springs for broken or shifted leaves; the latter condition indicates broken or missing spring bolts. Inspect U-bolts for tightness; inspect shackle bolts for tightness, both at springs and frame.

(b) *Weekly.* Tighten any loose nuts and bolts.

(5) **ITEM 76, FENDERS.** Inspect fenders for damage and looseness of fastening to body. Tighten attaching nuts and bolts, if found to be loose.

(6) **ITEM 77, *TOWING CONNECTIONS.**

(a) Inspect drawbar assembly and see that it is properly fastened to frame, and in good condition. Inspect lunette eye to see that it is in good condition for attaching to pintle. Be sure parking wheel locks in parking position and in towing position, and is held securely in latter position by

INSPECTION AND PREVENTIVE MAINTENANCE SERVICES

antiswing bracket. Inspect safety chains to see that they are complete and secure. Push plug of trailer wiring securely into socket on towing vehicle.

(b) *Weekly.* Tighten assembly and mounting bolts, and lubricate as necessary.

(7) **ITEM 78, BODY, LOAD, AND TARPS.** Examine body, racks, and roof slats for damage. Inspect tarp for proper number of hold-down ropes and straps, and for rips, tears, or other damage. Inspect tail gate to see that hinge is in proper working order and fastening chains are present and in good condition. If trailer is loaded, see that load is properly stowed. If vehicle is equipped with a 250-gallon tank, inspect weld joint between tank and frame, noting whether there is any indication of separation. Examine manhole cover to see that it is in alinement with opening, that the seal is in good condition, and that cover locks securely.

(8) **ITEM 82, *TIGHTEN WHEEL, RIM, AND SPRING U-BOLT NUTS.**

(a) Tighten all wheel, rim, and spring U-bolt nuts, replacing any nuts which may be missing.

(b) *Weekly.* Tighten all units where inspection or experience indicates the need on a weekly basis.

(9) **ITEM 83, *LUBRICATE AS NEEDED.**

(a) Lubricate all points where inspection of the vehicle indicates the necessity.

(b) *Weekly.* Lubricate the vehicle as indicated on the lubrication chart, or as experience and inspection indicates the need on a weekly basis.

(10) **ITEM 84, *CLEAN VEHICLE.**

(a) Clean the vehicle and remove excess dirt and grease from exterior and running gear.

(b) *Weekly.* Wash vehicle and remove all dirt and grease. If washing is impractical, wipe as clean as possible.

c. **Additional Procedures for 250-gallon Tank Trailer.** The following procedures are to be performed in addition to, and after, those listed above:

(1) **ITEM 73, LEAKS, GENERAL.** Inspect tank, valves, and fittings for leaks. Pay particular attention to welded joints of tank, pipe connections, and valves. If valves leak around valve stem, tighten packing nut until leak is stopped, using care not to tighten nut excessively so as to score valve stem. Report valves which leak because of improper seating.

(2) **ITEM 85, *EQUIPMENT.**

(a) Inspect loading pump and test it to see that it is in working condition. If seepage is noted around packing gland on piston rod when testing, tighten packing nut, using care not to get it too tight, as rod may be scored. Inspect intake hose for cuts and breaks; inspect strainer on intake end to see if it is present, in good condition, and clean.

(b) *Weekly.* Remove and clean intake strainer.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section VI

LUBRICATION

	Paragraph
Introduction	14
Lubrication guide	15

14. INTRODUCTION.

a. Lubrication is an essential part of preventive maintenance, determining to a great extent the serviceability of parts and assemblies.

15. LUBRICATION GUIDE.

a. **General.** The trailer should be lubricated as indicated on the Lubrication Guide (fig. 9). Severe operating conditions may necessitate immediate attention, especially in cases where vehicle components have been submerged in water, chemicals, snow or mud.

b. **Supplies.** In the field, it may not be possible to supply a complete assortment of lubricants called for by the Lubrication Guide to meet the recommendations. It will be necessary to make the best use of those lubricants available, subject to inspection by the officer concerned, in consultation with responsible ordnance personnel.

c. **Lubrication Notes.** The following notes apply to the Lubrication Guide (fig. 9). **NOTE:** For lubrication and service below -10 F, refer to OFSB 6-11.

(1) **FITTINGS.** Clean before applying lubricant. Lubricate until new grease is forced from the bearings. **CAUTION:** If trailer is to be washed, lubricate *after washing*.

(2) **WHEEL BEARINGS.** Remove wheel, clean and repack bearings.

(3) **OILCAN POINTS.** Lubricate trailer hinges, brake lever, links, clevises, pins and parking wheel spring latch.

(4) **POINTS REQUIRING NO LUBRICATION.** Springs.

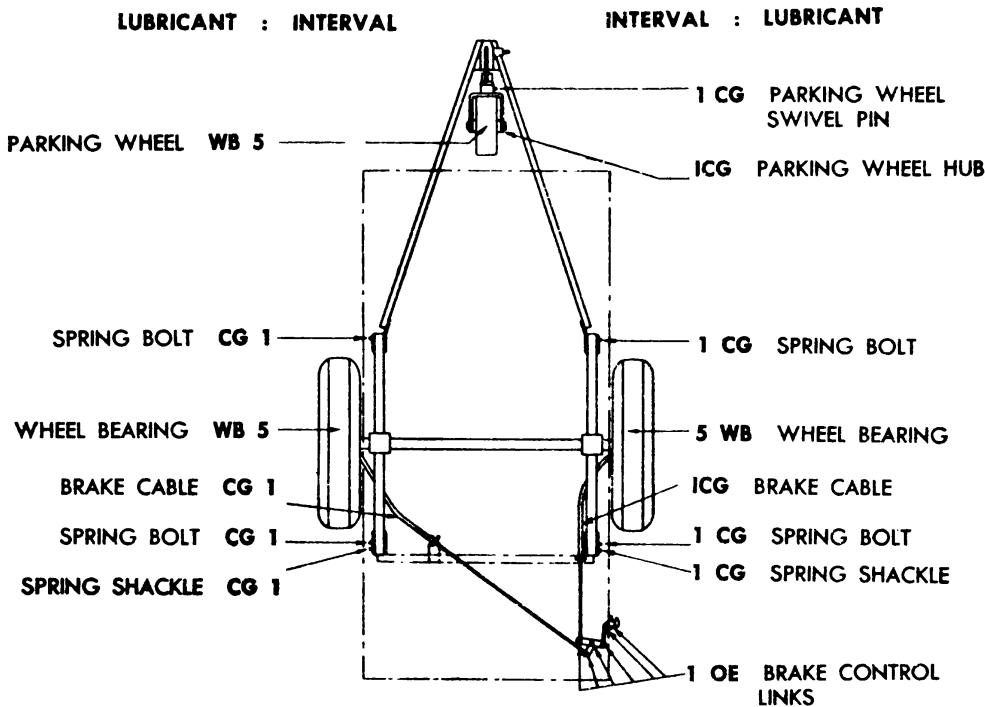
(5) **INTERVALS.** The intervals indicated are for normal service. For extreme conditions of speed, heat, water, mud, snow, rough roads, dust, etc., lubricate more frequently.

d. Reports and Records.

(1) **REPORTS.** If lubrication instructions are closely followed, proper lubricants used, and satisfactory results not obtained, a report will be made to the ordnance officer responsible for the maintenance of materiel.

(2) **RECORDS.** A complete record of lubrication servicing will be kept for the materiel.

LUBRICATION



KEY

LUBRICANTS		INTERVALS
OE—OIL, ENGINE, SAE 30 (ABOVE +32°) 10 (BETWEEN +32° and 0°) 10 W/KEROSENE (BELOW 0°)	CG—GREASE, O.D. No. 1 (ABOVE +32°) No. 1 or 0 (BETWEEN +32° and 0°) No. 1 or 0 (BELOW 0°)	1—1000 MILES 5—5000 MILES
	WB—GREASE—GENERAL PURPOSE No. 2	CHECK DAILY

RA PD 310184

Figure 9—Lubrication Guide

1-TON, 2-WHEEL CARGO AND WATER TRAILERS**PART TWO—VEHICLE MAINTENANCE INSTRUCTIONS****Section VII****MAINTENANCE ALLOCATION**

	Paragraph
Scope	16
Allocation of maintenance	17

16. SCOPE.

a. The scope of maintenance and repair by the crew and other units of the using arms is determined by the availability of suitable tools, availability of necessary parts, capabilities of the mechanics, time available and the tactical situation. All of these are variable and no exact system of procedure can be prescribed.

17. ALLOCATION OF MAINTENANCE.

a. Indicated below are the maintenance duties for which tools and parts have been provided for the using arm and ordnance maintenance personnel. Replacements and repairs which are the responsibility of ordnance maintenance personnel may be performed by using arm personnel when circumstances permit, within the discretion of the commander concerned. Echelons and words as used in this list of maintenance allocations are defined as follows:

SECOND ECHELON:	Line organization regiments, battalions, companies, detachments, and separate companies.
THIRD ECHELON:	Ordnance light maintenance companies, ordnance maintenance companies, ordnance divisional maintenance battalions, and post ordnance shops.
FOURTH ECHELON:	Ordnance heavy maintenance companies and service command shops.
FIFTH ECHELON:	Ordnance base regiments, ordnance bases, arsenals, and manufacturers' plants.
SERVICE (including preventive maintenance): Refer to AR 850-15, paragraph 23 a (1) and (2).	Consists of servicing, cleaning, lubricating, tightening bolts and nuts, and making external adjustments of subassemblies or assemblies and controls.

MAINTENANCE ALLOCATION

REPLACE: Refer to AR 850-15, paragraph 23 a (4).	Consists of removing the part, subassembly or assembly from the vehicles, and replacing it with a new or reconditioned or rebuilt part, subassembly or assembly, whichever the case may be.
REPAIRS Refer to AR 850-15, paragraph 23 a (3) and (5), in part.	Consists of making repairs to, or replacement of the part, subassembly or assembly that can be accomplished without completely disassembling the subassembly or assemblies, and does not require heavy welding or riveting, machining, fitting and/or alining or balancing.
REBUILD: Refer to AR 850-15, paragraph 23 a (5), in part, and (6).	Consists of completely reconditioning and replacing in serviceable condition any unserviceable part, subassembly or assembly of the vehicle, including welding, riveting, machining, fitting, alining, balancing, assembling and testing.

b. Allocation Chart for Steel Body Cargo Trailer.

AXLE	ECHELONS			
	2nd	3rd	4th	5th
Axle assembly—replace	X			
Axle assembly—repair		X		
Axle assembly—rebuild			E	X
Bearings, wheel—service and/or replace	X			
Drums, brake—replace	X			
Hub assemblies—replace	X			
Hub assemblies—repair		X		
Hub assemblies—rebuild			X	
Hub and drum assemblies—replace	X			
Retainers, wheel grease—replace	X			
Shoe assemblies—service and/or replace	X			
Shoe assemblies—repair (reline)		X		

BRAKE (PARKING)

Controls and linkage—service and/or replace	X
Controls and linkage—repair	X

BODY AND FRAME

Body and frame assembly—replace and/or repair	X
Bows—replace	X
Bows—repair	X
Bumpers, volute spring—replace	X

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

	ECHELONS			
	2nd	3rd	4th	5th
BODY AND FRAME (Cont'd)				
Racks (end and side)—replace	X			
Racks (end and side)—repair		X		
Shackles and bolts—replace	X			
Shackles—repair		X		
Spring assemblies—replace	X			
Spring assemblies—repair		X		
Spring assemblies—rebuild			X	
Tail gate—replace	X			
Tail gate—repair		X		
Tarpaulin—replace	X			
Tarpaulin—repair		E	X	
ELECTRICAL GROUP				
Conduits and wiring—replace	X			
Conduits and wiring—repair		X		
Lamp assemblies—replace	X			
Lamp assemblies—repair		X		
Plug, electrical—replace	X			
Switch assembly—replace	X			
Switch assembly—repair		X		
MISCELLANEOUS				
Fender and support assemblies—replace	X			
Fender and support assemblies—repair		X		
SUPPORT, DOLLY				
Bearings, wheel (pneumatic tire unit)—service and/or replace	X			
Bushing, wheel (all steel wheel unit)—replace		X		
Chains, safety—replace	X			
Chains, safety—repair		X		
Drawbar assembly—replace	X			
Drawbar assembly—repair		X		
Lunette—replace	X			
Lunette—repair		X		
Retainers, wheel grease (pneumatic tire unit)— replace	X			
Support assembly, dolly—replace	X			
Support assembly, dolly—repair		X		
Support assembly, dolly—rebuild			E	X

MAINTENANCE ALLOCATION**ECHELONS**

2nd 3rd 4th 5th

TIRES

Casings and tubes—replace	X			
Casings—repair			E	X
Tubes, inner—repair	E	E	X	

VEHICLE ASSEMBLY

Trailer assembly—service	X			
Trailer assembly—rebuild (with serviceable unit assemblies)			X	E

WHEELS

Wheels—replace	X			
Wheels—rebuild			E	X

c. Allocation Chart for Wood Body Cargo Trailer.**AXLE**

Axle assembly—replace	X			
Axle assembly—repair		X		
Axle assembly—rebuild			E	X
Bearings, wheel—service and/or replace	X			
Drums, brake—replace	X			
Hub assemblies—replace	X			
Hub assemblies—repair		X		
Hub assemblies—rebuild			X	
Hub and drum assemblies—replace	X			
Retainers, wheel grease—replace	X			
Shoes, brake—service and/or replace	X			
Shoes, brake—repair (reline)		X		

BODY AND FRAME

Body assembly—replace and/or repair		X		
Bows—replace	X			
Bows—repair		X		
Bumpers, volute spring—replace	X			
Frame assembly—repair		X		
Frame assembly—rebuild			E	X
Racks (end and side)—replace	X			
Racks (end and side)—repair		X		
Shackles and bolts—replace	X			
Shackles—repair		X		
Spring assemblies, suspension—replace	X			
Spring assemblies, suspension—repair		X		
Spring assemblies, suspension—rebuild			X	

1-TON, 2-WHEEL CARGO AND WATER TRAILERS**ECHELONS**

2nd 3rd 4th 5th

BODY AND FRAME (Cont'd)

Tail gate—replace	X			
Tail gate—repair		X		
Tarpaulin—replace	X			
Tarpaulin—repair		E	X	

ELECTRICAL GROUP

Conduit and wiring—replace	X			
Conduit and wiring—repair		X		
Lamp assemblies—replace	X			
Lamp assemblies—repair		X		
Plug, electrical—replace	X			
Switch assembly—replace	X			
Switch assembly—repair		X		

MISCELLANEOUS

Fender and support assemblies—replace	X			
Fender and support assemblies—repair		X		

SUPPORT, DOLLY

Bushings, wheel—replace		X		
Chains, safety—replace	X			
Chains, safety—repair		X		
Drawbar assembly—replace	X			
Drawbar assembly—repair		X		
Lunette—replace	X			
Lunette—repair		X		
Support assembly, dolly—replace	X			
Support assembly, dolly—repair		X		
Support assembly, dolly—rebuild			E	X

TIRES

Casings and tubes—replace	X			
Casings—repair			E	X
Tubes—repair	E	E	X	

VEHICLE ASSEMBLY

Trailer assembly—service	X			
Trailer assembly—rebuild (with serviceable unit assemblies)			X	E

WHEELS

Wheels—replace	X			
Wheels—rebuild			E	X

MAINTENANCE ALLOCATION**ECHELONS**

2nd 3rd 4th 5th

d. Allocation Chart for Water Tank Trailer.**AXLE**

Axle assembly—replace	X			
Axle assembly—repair		X		
Axle assembly—rebuild			E	X
Bearings, wheel—service and/or replace	X			
Drums, brake—replace	X			
Hub assemblies—replace	X			
Hub assemblies—repair		X		
Hub assemblies—rebuild			X	
Hub and drum assemblies—replace	X			
Retainers, wheel grease—replace	X			

BRAKE (PARKING)

Controls and linkage—service and/or replace	X			
Controls and linkage—repair		X		
Shoe, assemblies—service and/or replace	X			
Shoe, assemblies—repair (reline)		X		

ELECTRICAL GROUP

Conduits and wiring—replace	X			
Conduits and wiring—repair		X		
Lamp assemblies—replace	X			
Lamp assemblies—repair		X		
Plug, electrical—replace	X			
Switch assembly—replace	X			
Switch assembly—repair		X		

FRAME AND TANK

Box assemblies, water faucet—replace	X			
Box assemblies, water faucet—repair		X		
Bumper, volute spring—replace	X			
Cover, tank—replace	X			
Cover, tank—repair		X		
Frame and tank assembly—replace and/or repair		X		
Hose and strainer assembly—replace	X			
Hose and strainer assembly—repair		X		
Pump assembly, water—replace	X			
Pump assembly, water—repair		X		
Pump assembly, water—rebuild			X	
Rack, hose—replace	X			
Rack, hose—repair		X		

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

	ECHELONS			
	2nd	3rd	4th	5th
FRAME AND TANK (Cont'd)				
Shackles and bolts—replace.....	X			
Shackles—repair.....		X		
Spring assemblies, suspension—replace.....	X			
Spring assemblies, suspension—repair.....		X		
Spring assemblies, suspension—rebuild.....			E	X
MISCELLANEOUS				
Fender and support assemblies—replace.....	X			
Fender and support assemblies—repair.....		X		
SUPPORT, DOLLY				
Bearings, wheel (pneumatic tire unit)—service and/or replace.....	X			
Bushing, wheel (all steel wheel unit)—replace....		X		
Chains, safety—replace.....	X			
Chains, safety—repair.....		X		
Drawbar assembly—replace.....	X			
Drawbar assembly—repair.....		X		
Lunette—replace.....	X			
Lunette—repair.....		X		
Retainers, wheel grease (pneumatic tire unit)—replace.....	X			
Support assembly, dolly—replace.....	X			
Support assembly, dolly—repair.....		X		
Support assembly, dolly—rebuild.....			E	X
TIRES				
Casings and tubes—replace.....	X			
Casings—repair.....			E	X
Tube—repair.....	E	E	X	
VEHICLE ASSEMBLY				
Trailer assembly—service.....	X			
Trailer assembly—rebuild (with serviceable unit assemblies).....			X	E
WHEELS				
Wheels—replace.....	X			
Wheels—rebuild.....			E	X
NOTE: Operations allocated will normally be performed in the echelon indicated by "X".				
Operations allocated to the echelons as indicated by "E" may be accomplished by the respective echelons in emergencies only.				

Section VIII

ORGANIZATIONAL PREVENTIVE MAINTENANCE SERVICES

Paragraph

Second echelon preventive maintenance services 18

18. SECOND ECHELON PREVENTIVE MAINTENANCE SERVICES.

a. Regular scheduled maintenance inspections and services are a preventive maintenance function of the using arm, and are the responsibility of commanders of operating organizations.

(1) **FREQUENCY.** The frequencies of the preventive maintenance services outlined herein are considered a minimum requirement for normal operation of vehicles. Under unusual operating conditions, such as extreme temperatures and dusty or sandy terrain, it may be necessary to perform certain maintenance services more frequently.

(2) **FIRST ECHELON PARTICIPATION.** The drivers should accompany their vehicles and assist the mechanics while periodic second echelon preventive maintenance services are performed. Ordinarily the driver should present the vehicle for a scheduled preventive maintenance service in a reasonably clean condition; that is, it should be dry and not caked with mud or grease to such an extent that inspection and servicing will be seriously hampered. However, the vehicle should not be washed or wiped thoroughly clean, since certain types of defects, such as cracks, leaks, and loose or shifted parts or assemblies are more evident if the surfaces are slightly soiled or dusty.

(3) If instructions other than those contained in the general procedures in step (4) or the specific procedures in step (5) which follow, are required for the correct performance of a preventive maintenance service, or for correction of a deficiency, other sections of the vehicle Operator's Manual pertaining to the item involved, or a designated individual in authority, should be consulted.

(4) **GENERAL PROCEDURES.** These general procedures are basic instructions which are to be followed when performing the services on the items listed in the specific procedures. **NOTE:** The second echelon personnel must be thoroughly trained in these procedures so that they will apply them automatically.

(a) When new or overhauled subassemblies are installed to correct deficiencies, care should be taken to see that they are clean, correctly installed, and properly lubricated and adjusted.

(b) When installing new lubricant retainer seals, a coating of the lubricant should be wiped over the sealing surface of the lip of the seal. When the new seal is a leather seal, it should be soaked in SAE No. 10 engine oil (warm, if practicable) for at least 30 minutes. Then, the leather lip

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

should be worked carefully by hand, before installing the seal. The lip must not be scratched or marred.

(c) The general inspection of each item applies also to any supporting member or connection, and usually includes a check to see whether the item is in good condition, correctly assembled, secure, or excessively worn. The mechanics must be thoroughly trained in the following explanations of these terms.

1. The inspection for "good condition" is usually an external visual inspection to determine whether the unit is damaged beyond safe or serviceable limits. The term good condition is explained further by the following terms: Not bent or twisted, not chafed or burned, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut.

2. The inspection of a unit to see that it is "correctly assembled" is usually an external visual inspection to see whether it is in its normal assembled position in the vehicle.

3. The inspection of a unit to determine if it is "secure" is usually an external visual examination, a hand-feel, or a pry-bar check for looseness. Such an inspection should include any brackets, lock washers, lock nuts, locking wires, or cotter pins used in assembly.

4. "Excessively worn" will be understood to mean worn close to, or beyond, serviceable limits, and is likely to result in a failure if not replaced before the next scheduled inspection.

(d) *Special Services.* These are indicated by repeating the item numbers in the columns which show the interval at which the services are to be performed, and show that the parts or assemblies are to receive certain mandatory services. For example, an item number in one or both columns opposite a "tighten" procedure, means that the actual tightening of the object must be performed. The special services include:

1. *Adjust.* Make all necessary adjustments in accordance with the pertinent section of the vehicle Operator's Manual, special bulletins, or other current directives.

2. *Clean.* Clean units of the vehicle with dry-cleaning solvent to remove excess lubricant, dirt, and other foreign material. After the parts are cleaned, rinse them in clean fluid and dry them thoroughly. Take care to keep the parts clean until reassembled, and be certain to keep cleaning fluid away from rubber or other material which it will damage. Clean the protective grease coating from new parts, since this material is not a good lubricant.

3. *Special lubrication.* This applies either to lubrication operations that do not appear on the vehicle Lubrication Guide, or to items that do not appear on such charts, but should be performed in connection with the maintenance operations, if parts have to be disassembled for inspection or service.

ORGANIZATIONAL PREVENTIVE MAINTENANCE SERVICES

4. *Serve.* This usually consists of performing special operations, such as replenishing battery water, draining and refilling units with oil, and changing the oil filter cartridge.

5. *Tighten.* All tightening operations should be performed with sufficient wrench torque (force on the wrench handle) to tighten the unit according to good mechanical practice. Use torque-indicating wrench where specified. Do not overtighten, as this may strip threads or cause distortion. Tightening will always be understood to include the correct installation of lock washers, lock nuts and cotter pins provided to secure the tightening.

(e) When conditions make it difficult to perform the complete preventive maintenance procedures at one time, they can sometimes be handled in sections, planning to complete all operations within the week, if possible. All available time at halts and in bivouac areas must be utilized, if necessary, to assure that maintenance operations are completed. When limited by the tactical situation, items with Special Services in the columns should be given first consideration.

(f) The numbers of the preventive maintenance procedures that follow are identical with those outlined on WD AGO Form No. 461, which is the Preventive Maintenance Service Work Sheet for Wheeled and Half-track Vehicles. Certain items on the work sheet that do not apply to this vehicle are not included in the procedures in this manual. In general, the numerical sequence of items on the work sheet is followed in the manual procedures, but in some instances there is deviation for conservation of the mechanic's time and effort.

(5) **SPECIFIC PROCEDURES.** The procedures for performing each item in the 1000-mile (monthly) and 6000-mile (six-month) maintenance procedures are described in the following chart. Each page of the chart has two columns at its left edge corresponding to the 6000 mile and the 1000 mile maintenance respectively. Very often it will be found that a particular procedure does not apply to both scheduled maintenances. In order to determine which procedure to follow, look down the column corresponding to the maintenance due, and wherever an item number appears, perform the operations indicated opposite the number.

MAINTENANCE	
6000 Mile	1000 Mile
47	47

PREVENTIVE MAINTENANCE CHART

Tires and Rims. Inspect as follows:

VALVE STEMS AND CAPS. Examine to see that all stems are in good condition and in correct position and that all valve caps are present and installed securely. Do not tighten with pliers.

CONDITION. Inspect all tires for cuts, bruises, breaks, and blisters. Remove embedded glass, nails and stones.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

MAINTENANCE	
6000 Mile	1000 Mile
47	47
130	
130	
130	130
52	52

Examine for irregular tread wear, watching for any sign of flat spots, cupping, feather edges and one-sided wear. Any mechanical deficiencies causing such conditions should be determined and corrected or reported. The wheel positions of tires with irregular wear should be changed to even up the wear.

DIRECTION. Directional tires and non-directional tires should not be installed on same vehicle. Directional tires on all trailer wheels will ordinarily be mounted so that "V" of chevrons will point up when viewed from front.

RIMS. Inspect to see that all rims and their lock rings and flanges are in good condition and secure.

TIGHTEN. Tighten all wheel stud nuts securely.

SERVE. Remove wheels and examine to see that linings are in good condition, tightly secured to brake shoes, in good wearing contact with drums, free of lubricant, and not excessively worn. Also inspect to see that brake shoes are in good condition, properly secured and guided by anchor bolts, and that connecting links, guides, and springs are properly returned against their cams or stops by retracting springs. Thickness of lining above rivet heads at most worn section would be sufficient for at least 1,000 miles of safe operation. If linings are badly contaminated with lubricant, replace all linings on both brakes. If linings are only slightly contaminated with lubricant, clean them thoroughly. Clean all dust from the linings with a wire brush, clean cloth or compressed air.

DRUMS AND SUPPORTS. Thoroughly clean all dirt and grease from these parts, keeping solvent away from brake linings. Examine drums and supports to see that they are in good condition, securely mounted, and not excessively worn or scored. Tighten brake support bolts and drum-mounting bolts securely. **NOTE:** On 6,000 mile maintenance the wheel bearing item No. 52 should be performed before the brake drums are installed.

ADJUST. After the subsequent related items are completed, adjust shoes by minor adjustment method so that linings have proper clearance from brake drums. If new linings have been installed, adjust shoes by major adjustment method as described in paragraph 55.

Wheels (Bearings, Seals and Nuts). Inspect to see that wheels are in good condition. Revolve them and observe whether they have excessive run-out. Without removing wheels, examine for evidences of looseness in wheel bear-

ORGANIZATIONAL PREVENTIVE MAINTENANCE SERVICES

MAINTENANCE	
6000 Mile	1800 Mile
52	
130	130
56	56
128	128
79	79
80	80
81	81
91	91

ing adjustment. Revolve wheels and listen for indications of dry or damaged wheel bearings. Examine around brake supports and drums for lubricant leaks.

SERVE. Disassemble bearing and oil seals. Clean thoroughly and check rollers, balls, races and cages to see that they are in good condition and that cups are secure. If bearings must be replaced, new cups should be installed. See whether machined surfaces upon which bearings are assembled are in good condition. After lubricating wheel bearings, reassemble hub and drum assemblies into place; adjust bearings until there is a slight drag, and back off adjusting nut 1/6 turn.

Parking Brakes (Ratchet and Pawl). Inspect to see that these items are in good condition, adequately lubricated, correctly assembled, and securely mounted. Apply trailer parking brakes and observe whether they operate to hold vehicle, leaving a sufficient amount of total lever travel in reserve; see whether pawl meshes properly with ratchet teeth to lock brake in applied position, and that ratchet and pawl mechanism are not excessively worn.

Springs (Clips, Leaves, U-Bolts, Hangers and Shackles). Inspect to see that these items are in good condition, correctly assembled and secure. Spring clips and bolts should be in place; spring leaves should not be shifted out of their correct position. This may be an indication of a sheared center bolt. Examine to see that deflection of both springs is normal and approximately the same. Inspect hangers and bolts for excessive wear by means of a pry bar. Tighten all spring U-bolts securely and uniformly.

Axle. Examine to see whether it is sprung or bent, and that the attachments are secure.

Body Mountings. Inspect to see that mountings are all in good condition and secure.

Frame (Rails and Cross Members). Inspect frame, brackets, side rails and cross members to see that they are in good condition, secure and correctly aligned.

Wiring, Conduits, and Grommets. Inspect these items underneath the vehicle to see that they are in good condition, properly supported, connected and secure.

Lamps (Tail, Stop and Blackout). Inspect to see that the switch for these lamps operates properly and that with switch on, all lights light properly; see whether any lamps

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

MAINTENANCE		
6000 Mile	1000 Mile	
		remain on with switch off. Inspect all lamps to see that they are in good condition and secure; examine for dirty and broken lenses.
92	92	Safety Reflectors. See that reflectors are all present, in good condition, clean and secure.
125	125	Electric Connections. See that connections are in good condition, clean and secure.
99	99	Rear Fenders. See that fenders are in good condition and secure.
100	100	Body (Panels, Tail Gate and Chains, Floor, Skid Strips, Stakes, Sockets, Bows and Tarpaulins). Inspect to see that these items are in good condition and secure. See that tail gate is properly alined and fastened securely, that tarpaulin and end curtains, fasteners or ropes, grommets and metal hooks or loops on the body are all present, in good condition and secure, and that tail gate hinges and latches are adequately lubricated.
100	100	Tank and Accessories (on 250-gallon Tank Trailer). Inspect tank for leaks paying special attention to all weld joints. Inspect weld between tank and frame and see that there is no break or separation. Inspect pump and test. If packing nut has been taken up nearly full amount, re-pack gland around piston rod. Inspect valves for leakage around valve stems and for leakage due to bad seating of valve. Repack gland at valve stem, if needed; replace valve that leaks because of improper seating. Inspect manhole cover to see that it closes and locks properly. Inspect all piping and pipe joints for leaks.
103	103	Paint and Markings. Inspect paint of entire vehicle to see that it is in good condition, paying particular attention to any bright spots in finish that might cause glare or reflection. Inspect vehicle markings and identification for legibility. Include identification plates and their mountings, if furnished.
127	127	Landing Gear (Shafts, Wheel and Lock Pin). Inspect to see that these items are in good condition, correctly assembled, secure and adequately lubricated, and whether parking wheel locks securely in towing and parking positions. Apply chassis grease to all fittings and gears, and oil to pin joints that do not have fittings.
127		TIGHTEN. Tighten all landing gear assembly and mounting bolts.

ORGANIZATIONAL PREVENTIVE MAINTENANCE SERVICES

MAINTENANCE	
6000 Mile	1000 Mile
124	124
	124
126	126

Tow Hitch. Inspect towing lunette to see that it is in good condition and secure to drawbar.

TIGHTEN. Tighten all mountings and assembly bolts securely.

Safety Devices (Chains). Inspect to see that they are in good condition and securely connected to trailer drawbar.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section IX

TROUBLE SHOOTING

	Paragraph
Body and frame assembly (cargo and water trailer)	19
Draw bar and parking wheel.	20
Lighting system	21
Tires, wheels, hubs and wheel bearing.	22
Parking brakes	23
Axles and springs	24

19. BODY AND FRAME ASSEMBLY (CARGO AND WATER TRAILER)

a. Trouble Shooting—Cargo Trailer.

(1) BODY ALINEMENT.

Possible Cause	Possible Remedy
Loose spring and shackle bolts.	Tighten bolts in spring shackles and hangers.

(2) IMPROPER POSITION OF TOP.

Misalignment of racks.	Service or replace.
Broken rack side rail or post.	Replace.
Broken roof slats.	Replace.
Loose or missing bow retainer clips, pins and bolts.	Replace.
Loose or missing roof slat retainers.	Replace.
Loose or broken rack latch brackets.	Replace.
Missing tarpaulin tie rings.	Replace.

(3) LOOSE TAIL GATE.

Broken or loose tail gate hinges.	Repair or replace.
Broken or loose tail gate leg.	Repair or replace.
Broken or missing tail gate leg chain and pin.	Repair or replace.
Bent tail gate hinge rod, or pins.	Repair or replace.

b. Trouble Shooting—Water Trailer.

(1) BODY MISALINEMENT.

Loose spring and shackle bolts.	Tighten bolts in spring shackles and hangers.
---------------------------------	---

TROUBLE SHOOTING

(2) IMPROPER CLOSING OF TANK MANHOLE COVER.

Possible Cause	Possible Remedy
Bent hinge.	Repair or replace.
Bent wing nut eyebolt.	Repair or replace.
Damaged or lost gasket.	Replace.

(3) FAILURE OF PUMP TO FILL TANK.

Pump not primed.	Prime pump by removing priming plug (Y, fig. 7) fill pump with water and replace plug.
Bell strainer (F, fig. 7) not open.	Open strainer by unscrewing wing nut.
Bell strainer clogged.	Clean strainer.
Clogged hose and piping.	Clean hose and piping.
Stuffing box packing leaky.	Service—tighten stuffing box gland nut (P, fig. 8) or replace pump.
Manhole strainer dirty or clogged.	Service or replace.

(4) FAILURE OF WATER FAUCETS.

Sediment in tank.	Drain and flush.
Damaged piping.	Replace.
Damaged faucet valve seat.	Replace faucet.

(5) LOOSE WATER FAUCET BOXES (A, fig. 7).

Loose mounting bolts.	Tighten bolts.
Loose or broken cover hinges.	Repair or replace.
Broken snap (D, fig 8).	Replace.

20. DRAWBAR AND PARKING WHEEL.

a. Trouble Shooting.

(1) DRAWBAR MISALINED.

Rails bent.	Service or replace.
Rails loose.	Tighten casting bolts, spring hanger bolts, and rail U-bolts.

(2) PARKING WHEEL OPERATES HARD.

Swivel pin bent.	Service or replace quadrant (par. 33 a and b).
Swivel pin dry.	Lubricate. (See fig. 9.)
Latch spring broken.	Replace spring and latch rod.
Latch rod worn or bent.	Replace rod.
Latch rod dry.	Lubricate.
Disk wheel bent.	Replace wheel.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Possible Cause	Possible Remedy
Wheel hub damaged.	Replace wheel.
Wheel axle shaft worn or bent.	Replace shaft.
Wheel axle shaft dry.	Lubricate. (See fig. 9.)
21. LIGHTING SYSTEM.	
a. Trouble Shooting.	
(1) LIGHTS ARE DIM.	
Weak battery in towing vehicle	Test battery, and replace if necessary.
Loose or dirty connections.	Clean and tighten connections.
(2) LIGHTS FLICKER.	
Loose wire connections or intermittent ground.	Check wires and insulation; repair and tighten. Replace if necessary.
(3) NO LIGHTS.	
Dead battery in towing vehicle.	Replace battery.
Open or short circuit.	Locate open or short and repair.
Burned-out lamps.	Replace sealed lamp unit (par. 44 a).
	If caused by a short, locate short and repair.
22. TIRES, WHEELS, HUBS AND WHEEL BEARINGS.	
a. Trouble Shooting.	
(1) WOBBLY WHEEL.	
Loose studs.	Tighten or replace.
Improper bearing adjustment.	Adjust (par. 52 a).
Damaged bearings.	Replace bearings (par. 53 a, c and e).
	Adjust bearings (par. 52 a).
(2) SCUFFED TIRES.	
Under-inflation.	Inflate to correct pressure: 55 pounds.
Bent axle.	Replace axle (pars. 61 and 62).
Dragging brake.	Repair.
(3) AIR LEAKAGE.	
Valve cap missing.	Install new cap.
Valve cap seal broken.	Replace valve cap.
Valve core loose or damaged.	Tighten or replace core.
Torn or punctured inner tube.	Repair tube (par. 49 a), or replace if necessary.

TROUBLE SHOOTING

23. PARKING BRAKES.

a. Trouble Shooting.

(1) BRAKES WILL NOT HOLD.

Possible Cause	Possible Remedy
Brakes out of adjustment.	Adjust (par. 27 a (20)) (par. 55 a) (par. 57 g).
Brake bands worn out.	Replace shoe assembly (pars. 56 and 57).
Cables too loose.	Adjust cables at rod end yoke (par. 57 g).
Broken cable.	Install new cable (pars. 58 and 59).
Hand lever damaged.	Replace complete lever assembly (par. 27 a (18) (19)).
Grease on linings.	Install new shoe assemblies and adjust brakes (pars. 56 and 57).

(2) BRAKES DRAGGING.

Shoe return springs broken or have taken permanent set.	Replace spring (pars. 56 and 57).
Arm and cam spring broken or have taken permanent set so that it does not return cam to neutral position.	Replace spring (pars. 56 and 57).
Hand lever not completely released.	Release completely.
Insufficient clearance between shoe and drum.	Adjust brake shoes (par. 57 g).
Loose wheel bearings.	Adjust bearings (par. 52 a).

24. AXLES AND SPRINGS.

a. Trouble Shooting.

(1) SPRINGS ARE NOISY.

Loose spring mounting bolts.	Tighten or replace.
Springs dry.	Lubricate spring shackle.
Broken spring leaf.	Replace spring (pars. 63 and 64).
Springs out of line.	Check and tighten the bolt and hanger assemblies.
Center bolt loose.	Tighten center bolt nut.
Clip bolts loose.	Tighten clip bolt nuts.
Tie bolts loose.	Tighten tie bolt nuts.
Center bolt sheared.	Remove spring and replace (pars. 63 and 64).

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Possible Cause	Possible Remedy
Worn bolts in shackles.	Replace (par. 27, a (15)).
Worn bushing in shackles.	Replace shackle complete.
(2) TRAILER WEAVES.	
Axle nut loose.	Tighten and adjust wheel bearings (par. 52, a).
Wheel bearings out of adjustment.	Adjust wheel bearings (par 52, a).
Spring assembly loose.	Tighten all bolts.
Axle bent.	Replace axle (pars. 61 and 62).

Section X

BODY AND FRAME ASSEMBLY

	Paragraph
Body description	25
Removal of body and frame assembly components	26
Installation of body and frame assembly components	27

25. BODY DESCRIPTION.

a. **Steel Body Cargo Trailer** (fig. 10). The body is made of sheet steel welded together to form the box, and is integral with the steel frame consisting of side and end rails, and cross bolsters. The body front and side panels are stationary, and are made of No. 14-gage steel. The rear of body is equipped with a hinged tail gate made of No. 14-gage steel and reinforced by three heavy strap hinges. The side panels are each equipped with four pockets into which are placed the removable side rack assembly posts. Both sides and ends have tarpaulin loops welded to panels to which the tarpaulin ropes are tied.

b. **Wood Body Cargo Trailer** (fig. 11). The body is made of $\frac{5}{8}$ -inch thick hardwood boards bolted together to form a box. The bottom of the body is of $\frac{13}{16}$ -inch thick hardwood, and is built integral with steel framework consisting of side members, front and rear sill, two steel cross members and also three wood cross members. The front and side panels are stationary and are bolted to the framework and bottom. The rear of the body is equipped with a hinged tail gate of hardwood reinforced with metal, and fastened to body with three heavy hinges. The sides have metal pockets bolted to them into which are placed the removable side rack assembly posts. Both sides and ends have tarpaulin rope hooks bolted to the panels to which the tarpaulin ropes are tied.

c. **Rack and Tarpaulin** (figs. 1, 2, 4 and 5). The set of racks consist of one right-hand and one left-hand, and two end racks, all of which are removable. The trailer is equipped with a canopy top, consisting of four removable roof slats which, in addition to the racks, form an enclosure over which the tarpaulin is installed. The racks are made of hardwood and are bolted together with carriage bolts. The side rack posts are inserted in pockets mounted on body side panels. The end racks are held in place by four latches which secure them to side racks. The roof slats are inserted in retainers located at the top of side racks. The tarpaulin is stenciled "FRONT" at one end, and has four tie ropes to each side and four on front and rear ends. Front and rear end flaps have leather straps for securing flap.

d. **Water Trailer** (figs. 7, 8, and 12). The 250-gallon elliptical welded steel tank has a 14-gage shell and 12-gage heads and baffle plates, with a drain plug at the bottom near the rear. The tank is equipped with a 16-inch diameter manhole on top with a hinged cover. Two saddles integral with

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

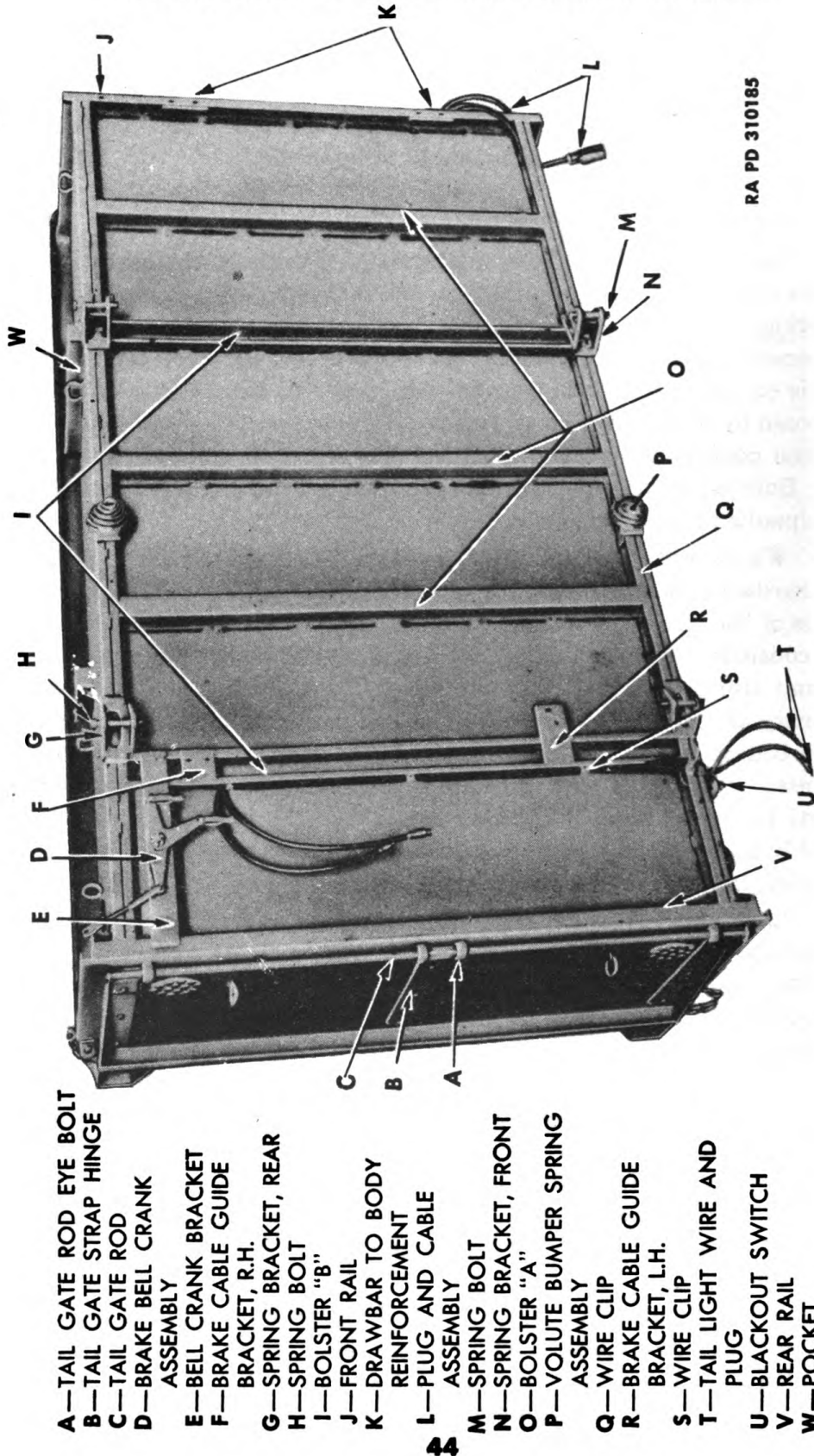


Figure 10—Body and Frame Assembly—Steel Body—Bottom View

BODY AND FRAME ASSEMBLY

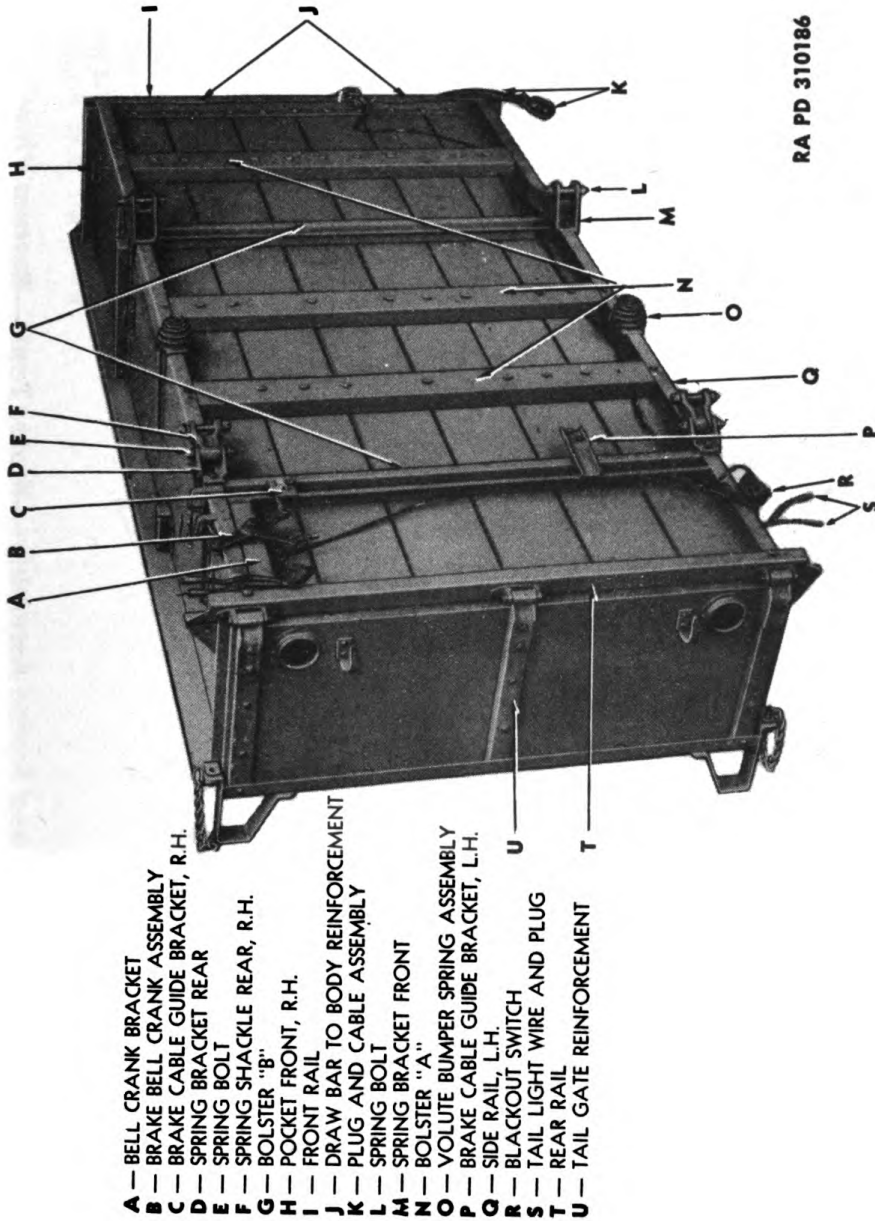
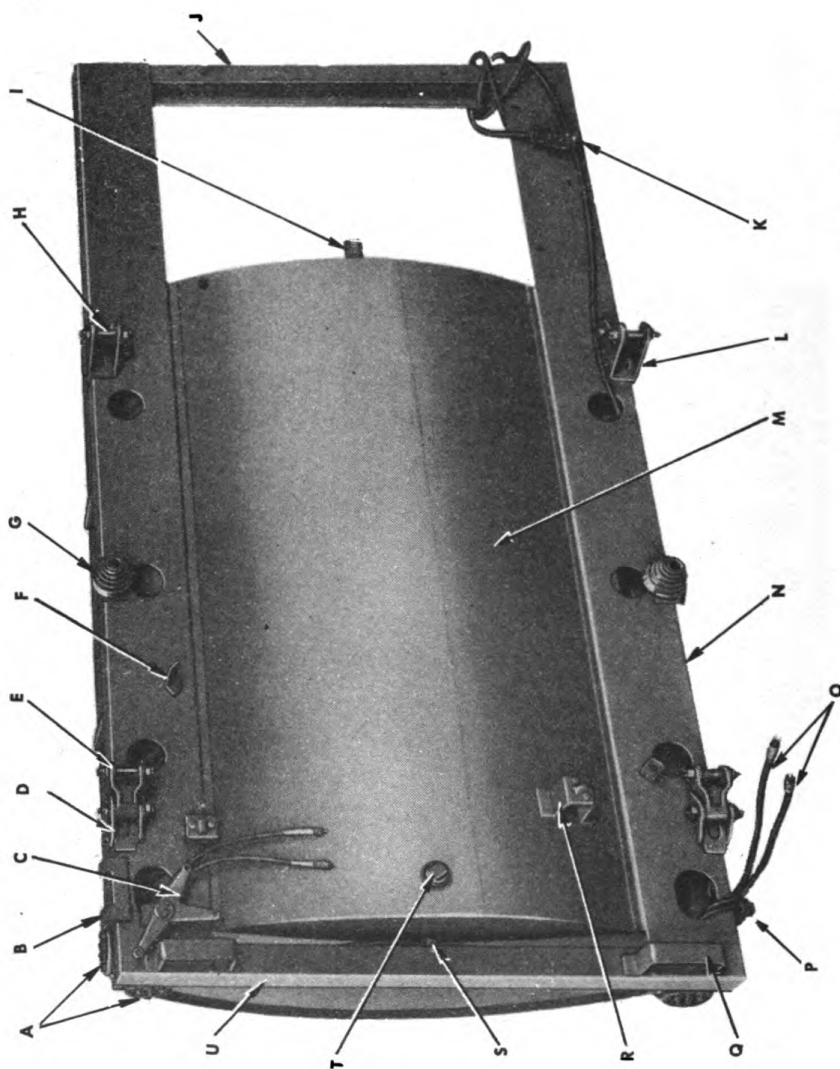


Figure 11—Body and Frame Assembly—Wood Body—Bottom View

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 310187

- A — RED REFLECTORS
- B — BRAKE LEVER BRACKET
- C — BRAKE BELL CRANK
- D — REAR SPRING BRACKET
- E — SPRING SHACKLE
- F — BRAKE CABLE SUPPORT BRACKET
- G — VOLUTE BUMPER SPRING ASSEMBLY
- H — SPRING BOLT
- I — WATER OUTLET
- J — FRAME END CHANNEL — FRONT
- K — PLUG AND CABLE ASSEMBLY
- L — FRONT SPRING BRACKET
- M — 250 GAL. TANK
- N — FRAME SIDE CHANNEL ASSEMBLY L. H.
- O — TAIL LIGHT WIRE AND PLUG
- P — BLACKOUT SWITCH
- Q — FRAME CHANNEL LEG
- R — BRAKE CONDUIT SUPPORT ASSEMBLY
- S — CABLE CLIP
- T — DRAIN PLUG
- U — FRAME END CHANNEL — REAR

Figure 12—Body and Frame Assembly—Water Tank—Bottom View

BODY AND FRAME ASSEMBLY

- A—PAWL ROD BUTTON
 B—PAWL ROD SPRING
 C—BRAKE OPERATING LEVER
 D—BRAKE QUADRANT BOLT
 E—SLOTTED NUT
 F—COTTER PIN
 G—LEVER TO BRACKET SCREW
 H—LOCK WASHER
 I—NUT
 J—PAWL ROD
 K—QUADRANT OR SECTOR
 L—PAWL
 M—COTTER PIN
 N—YOKE PIN
 O—HAND LEVER ADJUSTING YOKE
 P—LOCK NUT
 Q—CLEVIS
 R—CLEVIS PIN
 S—COTTER PIN
 T—BELL CRANK LEVER
 U—NUT
 V—LOCK WASHER
 W—BELL CRANK LEVER TO BODY STUD
 X—WASHER
 Y—SLOTTED NUT
 Z—COTTER PIN
 AA—DOUBLE END CLEVIS—USED ON WATER TRAILER ONLY IN PLACE OF ITEMS O, P, and Q.

RA PD 310188

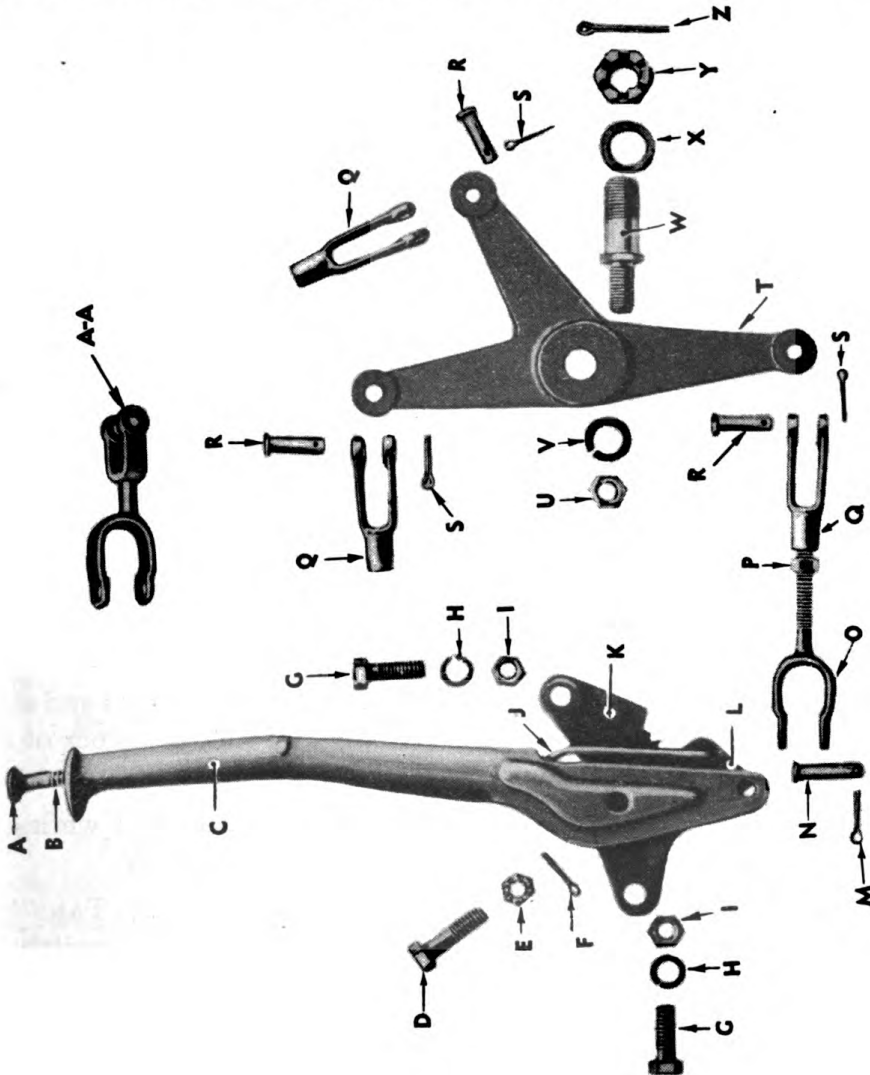


Figure 13—Brake Operating Lever and Bell Crank Assembly—Partially Disassembled

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

the tank rest on the frame, consisting of side and end rails. Frame and tank unit are welded by continuous welds. Two fender brackets are welded on each frame side and a reflector bracket at each rear corner of the frame.

(1) **PUMP AND FAUCET EQUIPMENT** (fig. 7). A hand pump is assembled at top and front end of tank. Supply of water enters tank by means of pipe from pump, entry being below manhole cover. Water entering tank passes through a metal and cloth strainer. When not in use pump handle is strapped in a vertical position. A 25-foot suction hose equipped with a bell strainer is assembled to the bottom of the pump. The hose, when not in use, rests in a coiled position on a rack supported by the frame in front of tank and secured with two leather straps. Water is drawn from the bottom of the tank at the front by means of piping leading to faucets in boxes at both sides of frame at the front of trailer. Each faucet box is equipped with a spring-hinged cover which is held in an open position by means of a snap and chain.

26. REMOVAL OF BODY AND FRAME ASSEMBLY COMPONENTS.**a. Steel and Wood Body Cargo Trailer.**

(1) **BLOCK UP BODY.** Place body on a set of horses or suitable supports until wheels clear the ground.

(2) **REMOVE LUBRICATION FITTINGS.** Unscrew fittings from spring and shackle bolts.

(3) **DISCONNECT BRAKE CONTROL CABLES.** Brake control cables and brake clevis can be disconnected from bell crank lever under body by removing cotter and clevis pins. Remove nuts, lock washers and cap screws from cable conduit supports. Remove supports and bend cables back over spring assembly to keep cable free from ground.

(4) **REMOVE BRAKE BELL CRANK LEVER** (fig. 13). Remove upper nut and lock washer from bell crank lever to body stud. Remove bell crank lever assembly and stud from underside of body.

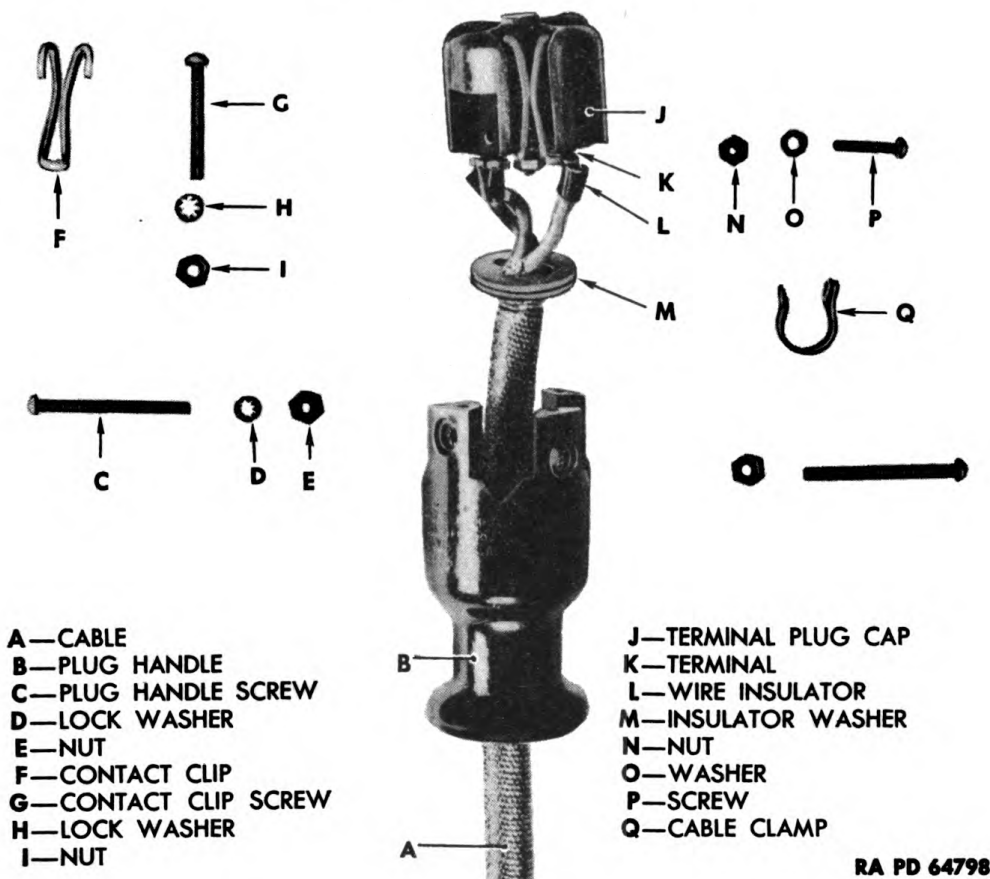
(5) **REMOVE SPRING HANGER BOLTS.** Remove cotter pins and slotted nuts from spring bolts and drive bolts out of hangers, using a block of wood to prevent battering end of bolt.

(6) **REMOVE AXLE AND SPRING ASSEMBLY.** Remove by lowering axle and spring assembly to ground and roll out from under body.

(7) **REMOVE BLACKOUT SWITCH. CARGO BODY** (fig. 10), **TANK BODY** (fig. 12). Remove three nuts, lock washers and bolts, and let switch hang on wires. Disconnect two electric cables and four taillight wires from switch.

(8) **REMOVE ELECTRIC CABLE AND PLUG ASSEMBLY** (fig. 14). Refer to paragraph 38.

BODY AND FRAME ASSEMBLY



RA PD 64798

Figure 14—Plug and Cable Assembly—Partially Disassembled

(9) **REMOVE DRAWBAR BOLTS.** Remove two nuts and lock washers from bolts that fasten rear of drawbar rails to lip at back of front spring hangers. Remove bolts.

(10) **REMOVE DRAWBAR U-BOLTS.** Remove four nuts and lock washers from U-bolts that fasten drawbar rails to front body crossrail. Remove U-bolts.

(11) **REMOVE DRAWBAR AND PARKING WHEEL ASSEMBLY.** Lower drawbar and parking wheel assembly to ground and pull out from under body.

(12) **REMOVE FENDERS.** Remove upper and lower fender bolts, washers, lock washers and nuts. Remove fenders. (NOTE: On water trailer, remove fender apron with fender.)

(13) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT ASSEMBLIES.** Twist $\frac{1}{8}$ turn right and pull wire connecting plugs out of taillight sockets. Remove two nuts and lock washers from taillight studs and pull taillight assembly out until studs are free of bracket. Remove taillight assembly.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

(14) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT WIRE ASSEMBLY.** Refer to paragraph 42 a.

(15) **REMOVE BRAKE OPERATING LEVER** (fig. 13). Pull cotter pin from hand brake clevis pin and remove clevis pin from clevis. Pull adjusting yoke from hand brake. Back off nuts, and remove lock washers from hand brake lever cap screws. Pull out cap screws and remove hand brake lever assembly.

(16) **REMOVE REFLECTORS.** Remove roundhead screws and nuts from reflectors and lift reflectors from side and rear.

(17) **REMOVE VOLUTE BUMPER SPRING ASSEMBLIES.** Remove nut and lock washer from bolt securing volute spring and support plate to under side of body and remove the assembly. Repeat operation on opposite side.

(18) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT BRACKET.** Remove two screws, two hexagonal-head cap screws, nuts and lock washers from taillight bracket. Remove bracket.

(19) **REMOVE TAIL GATE ASSEMBLY.** Pull cotter pins out of tail gate hinge rod or pins and remove washers from rod. Drive gate hinge rod or pins out of hinges and eyebolts. Pull chain with latch pins out of tail gate latches and remove tail gate.

b. Water Trailer.

(1) **BLOCK UP BODY.** Place body on a set of horses or suitable supports until wheels clear the ground.

(2) **REMOVE LUBRICATION FITTINGS.** Unscrew fittings from spring and shackle bolts.

(3) **REMOVE BRAKE CONTROL CABLES.** Disconnect brake control cables and brake clevis from bell crank lever under body by removing cotter and clevis pins. Remove nuts, lock washers and cap screws from cable conduit supports. Remove supports and bend cables back over spring assembly to keep cable free from ground.

(4) **REMOVE BRAKE BELL CRANK LEVER** (fig. 13). Remove upper nut and lock washer from bell crank lever to body stud. Remove bell crank lever assembly and stud from underside of body.

(5) **REMOVE SPRING HANGER BOLTS.** Remove cotter pins and slotted nuts from spring bolts and drive bolts out of hangers, using a block of wood to prevent battering end of bolt.

(6) **REMOVE AXLE AND SPRING ASSEMBLY.** Remove by lowering axle and spring assembly to ground and roll out from under body.

(7) **REMOVE BLACKOUT SWITCH** (fig. 12). Remove three nuts, lock washers and bolts, and let switch hang on wires. Disconnect two electric cables and four taillight wires from switch.

BODY AND FRAME ASSEMBLY

(8) **REMOVE ELECTRIC CABLE AND PLUG ASSEMBLY** (fig. 14). Remove bolts and screws which hold cable clamps to drawbar and body left side rail. Remove cable and plug assembly from drawbar and body.

(9) **REMOVE DRAWBAR BOLTS**. Remove two nuts and lock washers from bolts that fasten rear of drawbar rails to lip at back of front spring hangers. Remove bolts.

(10) **REMOVE DRAWBAR U-BOLTS**. Remove four nuts and lock washers from U-bolts that fasten drawbar rails to front body crossrail. Remove U-bolts.

(11) **REMOVE DRAWBAR AND PARKING WHEEL ASSEMBLY**. Lower drawbar and parking wheel assembly to ground and pull out from under body.

(12) **REMOVE FENDERS AND FENDER APRONS**. Remove upper and lower fender bolts, washers and nuts. Remove fenders and fender apron.

(13) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT ASSEMBLIES**. Twist $\frac{1}{8}$ turn right and pull wire connecting plugs out of taillight sockets. Remove two nuts and lock washers from taillight studs and pull taillight assembly out until studs are free of bracket. Remove taillight assembly.

(14) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT WIRE ASSEMBLY**. Remove cap screws, nuts and lock washers which secure taillight wire clips to body rails and remove clips. Pull out taillight wire assembly.

(15) **REMOVE BRAKE OPERATING LEVER** (fig. 13). Pull cotter pin from hand brake clevis pin and remove clevis pin from clevis. Pull adjusting yoke from hand brake. Back off nuts, and remove lock washers from hand brake lever cap screws. Pull out cap screws and remove hand brake lever assembly.

(16) **REMOVE REFLECTORS**. Remove roundhead screws and nuts from reflectors and lift reflectors from side and rear.

(17) **REMOVE VOLUTE BUMPER SPRING ASSEMBLY**. Remove nut and lock washer from bolt securing volute spring and support plate to under side of body and remove the assembly.

(18) **REMOVE SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT BRACKET**. Remove hexagonal-head cap screws, nuts and lock washers from taillight bracket. Remove bracket.

(19) **REMOVE TANK COVER WING NUT AND EYEBOLT**. Unscrew wing nut, pull cotter pin and remove washer; drive out pin and remove eyebolt with wing nut.

(20) **REMOVE TANK COVER AND HINGE**. Pull cotter pin, remove washer, drive out pin and remove cover and hinge.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

(21) **REMOVE BELL STRAINER.** Unscrew roundhead bolt of hose clamp enough so that bell strainer can be pulled from intake hose.

(22) **REMOVE HOSE.** Unscrew roundhead bolt of hose clamp enough so that hose can be pulled from bottom connection of pump. Unbuckle straps holding hose on rack and remove hose.

(23) **REMOVE HAND PUMP.** Remove two nuts, lock washers and bolts that hold pump to lower bracket. Remove pump by unscrewing entire assembly from pipe leading to tank opening. Hold pipe to keep it from being unscrewed.

(24) **REMOVE HOSE RACK.** Remove four nuts, plain washers and bolts and lift rack from frame.

(25) **REMOVE WATER BOXES.** Unscrew union ring on female union. Remove four nuts, lock washers, plain washers and step bolts and lower right-hand and left-hand water boxes with piping assembly to ground and remove.

27. INSTALLATION OF BODY AND FRAME ASSEMBLY COMPONENTS.**a. Steel and Wood Body Cargo Trailer.**

(1) **INSTALL TAIL GATE ASSEMBLY.** Mount tail gate on trailer body and install chained latch pins in gate latches to hold tail gate in position. Insert wedges between tail gate latches until hinge eyes and eyebolt eyes are in line. Install hinge rod. Install washers on rod or hinge pins. Insert and spread cotter pins.

(2) **INSTALL REFLECTORS.** Place reflectors so that holes line up, and install two roundhead screws, lock washers and nuts for each reflector.

(3) **INSTALL SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT BRACKET.** Line up taillight bracket with side of body so that flange extends to rear of steel body; on wood cargo body the bracket flange extends to the front. Install roundhead screw through body and then through top of bracket. Apply lock washer and nut. Tighten nut. Install hexagonal head cap screw through frame and bottom of bracket. Apply lock washers and nuts. Tighten nuts. **NOTE:** Care must be taken to scrape the paint where brackets are clamped to sides of body to insure proper ground for taillights.

(4) **INSTALL FENDERS.** Place fenders and/or fender aprons into position on body so that holes line up. Install roundhead bolt by starting bolt through body and then pushing bolt into fender upper hole. Install flat washer, lock washer and nut. Tighten nut. Install hexagonal head bolt through body frame and then through fender lower hole. Install flat washer, lock washer and nut. Tighten nut. Install remaining bolts, washers and nuts in like fashion. **NOTE:** If equipped with fender aprons, insert roundhead bolt by starting the bolt through the upper center hole

BODY AND FRAME ASSEMBLY

of the apron and then punching the bolt into the upper center hole of the fender. Install a flat washer, lock washer and nut. Tighten nut. Insert roundhead bolts in holes at each side of center hole, hook bolt heads in slotted brackets welded to frame. Install washers, lock washers and nuts. Install remaining bolts, flat washer, lock washers and nuts and tighten all nuts securely.

(5) **INSTALL VOLUTE BUMPER SPRING ASSEMBLIES.** Position volute bumper spring assembly on under side of body. Secure to body with bolt, lock washer and nut. Tighten nut. Repeat operation for opposite side.

(6) **INSTALL DRAWBAR ASSEMBLY.** Place drawbar assembly under body with lunette eye up.

(7) **INSTALL DRAWBAR BOLTS.** Line up hole in rear end of drawbar with hole in lip of front spring bracket, with drawbar on the outside, and insert bolt through holes. Install lock washers and nuts. Tighten nuts.

(8) **INSTALL U-BOLTS.** Secure drawbar rails to body front rail with two U-bolts, lock washers, and nuts. Tighten nuts.

(9) **INSTALL ELECTRIC CABLE AND PLUG ASSEMBLY.** Refer to paragraph 39 a (1) for installation on steel body and paragraph 39 b (1) for installation on wood body.

(10) **INSTALL SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT WIRE ASSEMBLY.** Refer to paragraph 41 c.

(11) **CONNECT BLACKOUT SWITCH.** Refer to paragraph 37 a (1) for connecting to steel body and paragraph 39 b (2) for connecting to wood body.

(12) **INSTALL BLACKOUT SWITCH.** Refer to paragraph 37 a (2).

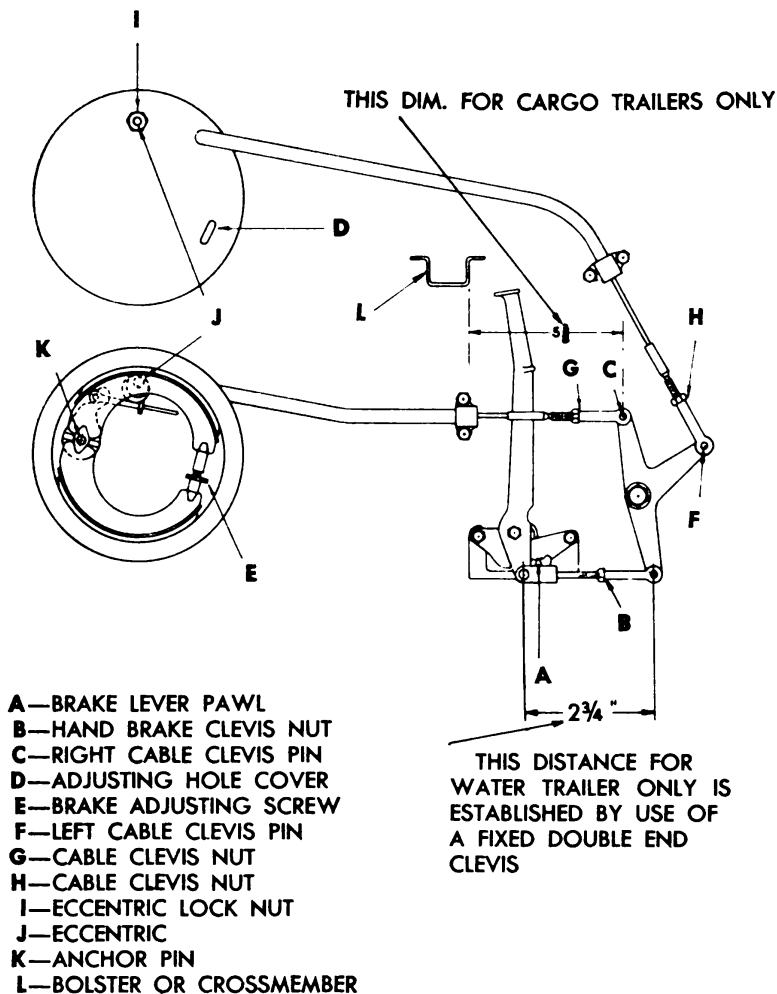
(13) **INSTALL SERVICE AND BLACKOUT TAILLIGHTS AND STOP LIGHTS.** Refer to paragraph 43 a for installation on steel body and paragraph 43 b for installation on wood body.

(14) **INSTALL AXLE AND SPRING ASSEMBLY.** Place axle assembly under the body with double wrap-around spring eye to the front, and brake cables to the rear.

(15) **INSTALL SPRING BOLTS.** Insert front spring eye into front spring hanger. Install spring bolt with lubricator hole to outside of trailer, and drive bolt (hammer and wood block) into place with bucking bar against casting. Install and tighten slotted nut. Insert and spread cotter pin. Install rear spring shackle in rear spring hanger. Drive spring bolt with lubricator hole to outside of trailer into place. Install and tighten slotted nut. Insert and spread cotter pin. Be sure the serrations on the spring bolts line up with the serrations in the front spring brackets and rear shackles when inserting spring bolts.

(16) **INSTALL LUBRICATION FITTINGS.** Install lubrication fittings in spring and shackle bolts.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 310189

Figure 15—Brake Adjustment Diagram

(17) **INSTALL BRAKE BELL CRANK LEVER ASSEMBLY.** Place bell crank lever assembly with stud on under side of body. Insert stud through hole in body. Install lock washer and upper nut on stud. Tighten nut.

(18) **INSTALL BRAKE OPERATING LEVER.** Line up brake operating lever on right side of body and install two cap screws, lock washers and nuts. Tighten nuts. Line up brake lever adjusting yoke with brake lever and install clevis pin. Insert cotter pin in clevis pin and spread cotter pin.

(19) **INSTALL BRAKE CABLES TO BELL CRANK.** Line up brake lever clevis and brake cable clevis with bell crank and install clevis pins. Insert cotter pins in clevis pins and spread cotter pins. Position brake cable conduit on under side of body. Place cable support bracket over cable conduit and secure to body with two cap screws, lock washers and nuts. Tighten nuts. Adjust brakes by following procedure in next step.

(20) **ADJUST BRAKE CABLES AND BRAKES** (fig. 15). With brake lever pawl set in first ratchet notch, adjust hand brake clevis so that center

BODY AND FRAME ASSEMBLY

of right cable clevis pin is spaced $5\frac{3}{8}$ inches from bolster or frame cross member. Lock hand brake clevis adjusting nut. Remove adjusting hole cover plates from brake backing plates. Insert screwdriver in slot and engage the adjusting screw. Tighten both brake adjusting screws by moving outer end of screwdriver toward center of trailer wheel until drag is felt when each wheel is rotated. Remove cable slack and insert clevis pins. Pull on brake lever vigorously several times until conduits are seated. Return brake lever pawl to first ratchet notch. Remove cable clevis pins. Pull brake cables until all slack is removed. Adjust cable clevises until clevis pins can just be inserted. Insert and spread cotter pins. Tighten cable clevis clamp nuts. Loosen brake adjusting screws until trailer wheels are just free. Apply brake lever until trailer wheel with least drag can just be turned by hand. Loosen brake adjusting screw on tighter wheel until drag on wheels is equal. Return brake lever to release position. Reinstall adjusting hole cover plates.

b. Water Trailer.

(1) **INSTALL WATER BOXES.** Place water boxes on right and left side of frame front and secure with four nuts, lock washers, plain washers and step bolts. Screw union ring on female union.

(2) **INSTALL HOSE RACK.** Install hose rack at front of frame with four nuts, plain washers and bolts.

(3) **INSTALL HAND PUMP.** Screw entire pump assembly to pipe leading to tank opening. Screw until fitting is tight and pump is in vertical and working position. Secure pump to lower bracket with two nuts, lock washers and bolts.

(4) **INSTALL HOSE.** Connect hose to bottom connection of pump. Secure at this point by tightening roundhead bolt on hose clamp. Secure hose to rack with provided buckle straps.

(5) **INSTALL BELL STRAINER.** Insert hose end of bell strainer in hose, and secure by tightening roundhead bolt on hose clamp.

(6) **INSTALL TANK COVER AND HINGE.** Place cover over tank opening and line up hinge holes. Insert hinge pin, place on washer and insert and spread cotter pin.

(7) **INSTALL TANK COVER WING NUT AND EYEBOLT.** Place eyebolt in space provided on side of tank opening opposite hinge, insert pin and secure with washer and cotter pin. Spread cotter pin. Screw wing nut on eyebolt.

(8) **INSTALL FRAME ASSEMBLY COMPONENTS.** Proceed as outlined in paragraph 27 a (2) through (20).

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section XI

DRAWBAR AND PARKING WHEEL

	Paragraph
Description	28
Drawbar removal	29
Drawbar disassembling	30
Drawbar assembling	31
Drawbar installation	32
Parking wheel, fork and quadrant removal and disassembling . . .	33
Parking wheel, fork and quadrant assembling and installation . . .	34

28. DESCRIPTION.

a. **Description.** The drawbar assembly consists of the drawbar bracket casting, lunette eye, two rails and two safety chains. The rails are made of 3-inch rolled steel reinforced channels and are attached to the drawbar bracket casting with four $\frac{7}{16}$ x 1 $\frac{1}{4}$ -inch cap screws. The safety chains are assembled to the drawbar bracket at the extreme front by a $\frac{3}{4}$ -inch cap screw which extends through both rails and the drawbar bracket casting. The lunette passes through the drawbar bracket casting and is secured with a washer, castellated nut and cotter pin. The drawbar rails are secured at their middle to the under side of the front body cross rails by U-bolts. The rear ends of the drawbar rails are bolted to a lip on the front spring hangers. The parking wheel is fastened to the drawbar bracket casting by means of a quadrant and pivot bolt. The parking wheel is used as a temporary support whenever the trailer is uncoupled from the tractor or when parking the trailer (fig. 16).

b. **Operation.** The parking wheel swings on a pivot bolt and is controlled by a spring latch and rod. It is designed to swing up when the trailer is being towed or down while the trailer is parked. The spring latch secures the parking wheel in either the up or down positions. The latch is operated by pulling latch rod out and moving the parking wheel into the up or down position.

29. DRAWBAR REMOVAL.

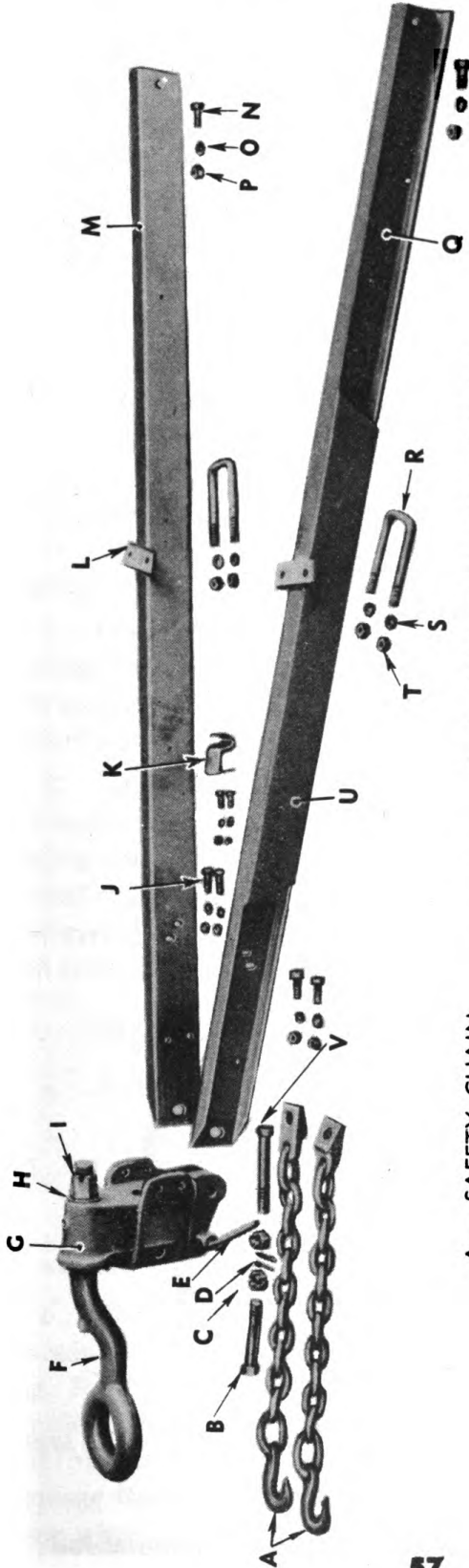
- a. Follow instructions in section X, par. 26 a (8) through (11).

30. DRAWBAR DISASSEMBLING.

a. **Remove Parking Wheel Assembly.** Remove cotter pin, slotted nut and bolt from the lower boss of drawbar casting.

b. **Remove Safety Chains.** Remove cotter pin, castellated nut and bolt at extreme front of drawbar.

DRAWBAR AND PARKING WHEEL



- | | |
|-------------------------------|----------------------------------|
| A — SAFETY CHAIN | L — DRAW BAR TO BODY SPACER |
| B — PARKING WHEEL SWIVEL BOLT | M — R.H. RAIL |
| C — CABLE CLIP SCREW | N — RAIL TO SPRING BRACKET SCREW |
| D — COTTER PIN | O — LOCK WASHER |
| E — LATCH ROD | P — NUT |
| F — LUNETTE | Q — L.H. RAIL |
| G — BRACKET CASTING | R — RAIL TO BODY U-BOLT |
| H — WASHER | S — LOCK WASHER |
| I — NUT | T — NUT |
| J — CAP SCREW | U — DRAW BAR RAIL REINFORCEMENT |
| K — RETRACTABLE PARKING WHEEL | V — BOLT (BRACKET TO RAILS) |
| FORK GUIDE (LEFT RAIL) | |

RA PD 64792

Figure 16—Drawbar Assembly—Partially Disassembled

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

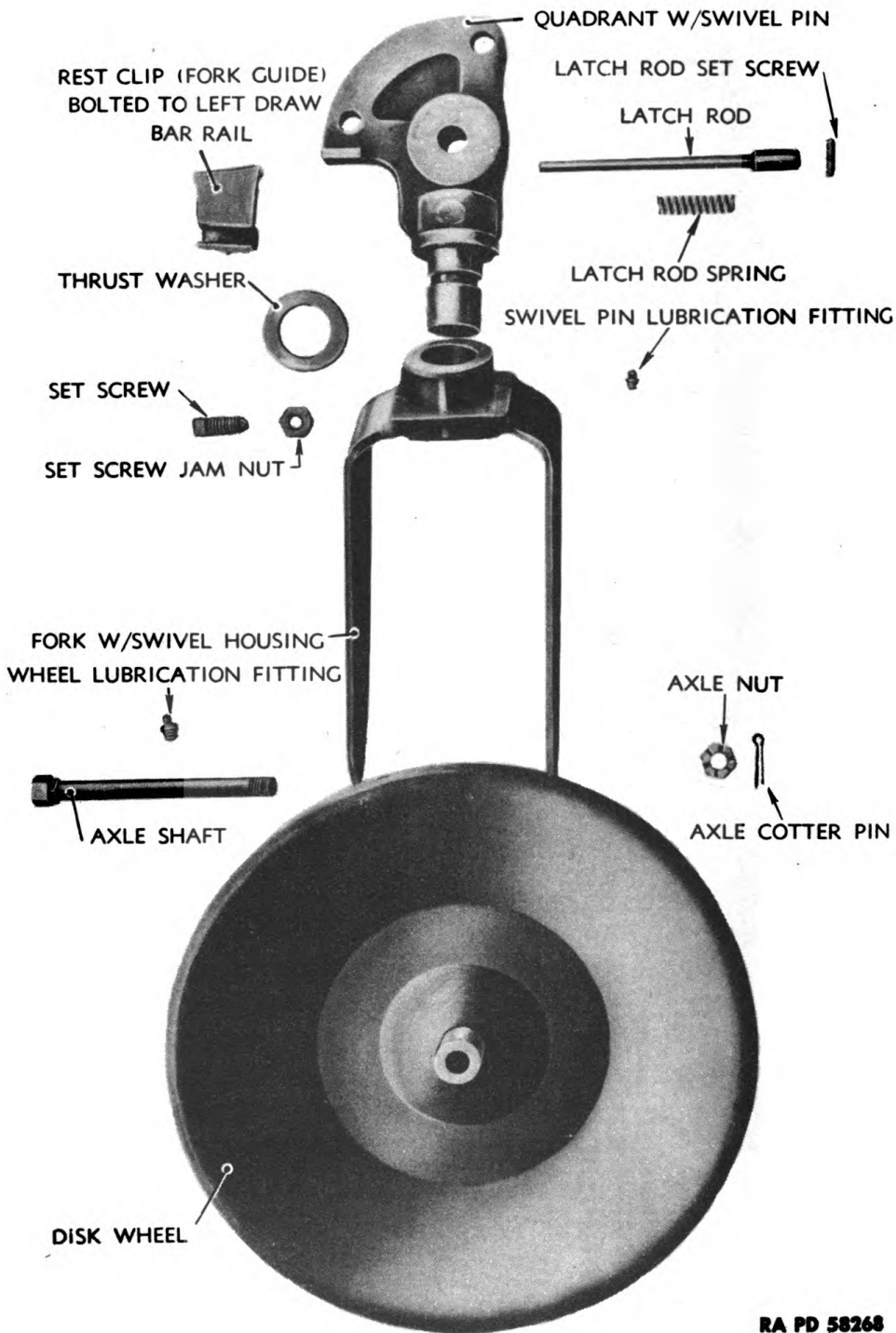


Figure 17—Parking Wheel Assembly—Disassembled
58

DRAWBAR AND PARKING WHEEL

c. **Remove Lunette.** Remove cotter pin and slotted nut (on lunette eye shank) at rear of casting. Pull lunette forward through the drawbar casting.

d. **Remove Drawbar Rails.** Remove four nuts, lock washers and bolts located at sides at rear of casting.

31. DRAWBAR ASSEMBLING.

a. **Install Safety Chains.** Place drawbar casting between drawbar rails so that rail front holes line up with hole in extreme front of casting. Insert bolt through hole in one chain bevel plate, and push bolt through hole in the extreme front of drawbar and rails. Slide other chain bevel plate over end of bolt, and install and tighten castellated nut. Install and spread cotter pin.

b. **Install Drawbar Rails.** Secure the two drawbar rails to the rear sides of drawbar casting by installing four bolts, lock washers and nuts. Tighten nuts.

c. **Install Lunette.** Push lunette shank front end of drawbar bracket casting and position so that lunette eye ring is horizontal. Install washer and slotted nut on lunette at rear of casting. Tighten nut. Install and spread cotter pin in nut.

d. **Install Parking Wheel Assembly.** Position parking wheel assembly under drawbar casting so that the holes in the parking wheel quadrant casting, line up with the plunger in lower boss of drawbar bracket casting. Install swing support bolt through hole in lower boss of drawbar casting to secure parking wheel quadrant. Install and tighten slotted nut. Install and spread cotter pin.

32. DRAWBAR INSTALLATION.

a. Follow instructions in section X, par. 27 a (6) through (9).

33. PARKING WHEEL, FORK AND QUADRANT REMOVAL AND DISASSEMBLING.

a. **Remove Parking Wheel Assembly** (par. 30 a).

b. **Remove Parking Wheel Fork from Quadrant and Wheel.** Loosen set screw jam nut and screw out set screw from fork swivel housing. Pull quadrant with swivel pin and thrust washer from fork swivel housing. Pull axle cotter pin from slotted nut and axle. Remove slotted nut from axle. Tap axle shaft from fork and wheel hub, taking care not to damage threads. Remove wheel from fork. Remove lubrication fittings from wheel hub and fork swivel housing.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS**34. PARKING WHEEL, FORK AND QUADRANT ASSEMBLING AND INSTALLATION.**

a. Install Wheel on Fork. Place disk wheel in fork and line up wheel hub holes with eyes in fork prong. Install axle shaft in fork prong eyes and wheel hub. Install and tighten slotted nut. Install and spread cotter pin in slotted nut. Install lubrication fitting in wheel hub.

b. Install Quadrant on Fork. Slip thrust washer on quadrant swivel pin. Insert quadrant swivel pin in fork swivel housing. Install set screw jam nut on set screw, and screw set screw into fork swivel housing. Tighten set screw jam nut. Install lubrication fitting in fork swivel housing.

c. Install Parking Wheel Assembly (par. 31 d).

Section XII

LIGHTING SYSTEM

	Paragraph
Description of lighting system	35
Blackout switch removal	36
Blackout switch installation	37
Electric cable and plug removal	38
Electric cable and plug installation	39
Service and blackout taillight and stop light wire removal	40
Service and blackout taillight and stop light wire installation	41
Service and blackout taillight and stop light removal	42
Service and blackout taillight and stop light installation	43
Lamp unit removal	44
Lamp unit installation	45

35. DESCRIPTION OF LIGHTING SYSTEM (figs. 18 and 19).

a. **Description.** The wiring diagram shows the complete wiring for the trailer including the location of lights and switches. The trailer is equipped with two combination taillights mounted one on each side near the rear of the body. The upper unit of the left-hand light is a combination service, stop and tail lamp, and the lower unit is a blackout tail lamp. The upper unit of the right-hand light is a blackout stop lamp, and the lower unit is a blackout tail lamp. Each light has two sealed lamp units which can be replaced by removing the screws on the light door.

b. **Operation.** Current for the lights is supplied by the towing vehicle, and transmitted through the cable and plug assembly located at the front of the drawbar. The other end of the cable, except for wood body cargo trailer, is attached to the blackout switch mounted on the left side of the trailer near the rear. In order to change from service to blackout lights, insert coin or screwdriver in switch and turn.

(1) **WOOD BODY CARGO TRAILER.** On the wood body cargo trailer, the plug and cable assembly terminates at a junction block on the front sill of trailer. From this junction block, a two-wire cable continues to the blackout switch at right rear side of trailer.

36. BLACKOUT SWITCH REMOVAL.

a. **Remove Switch Bolts.** Remove nuts, lock washers and bolts which secure switch to side of body, and let switch hang on wires.

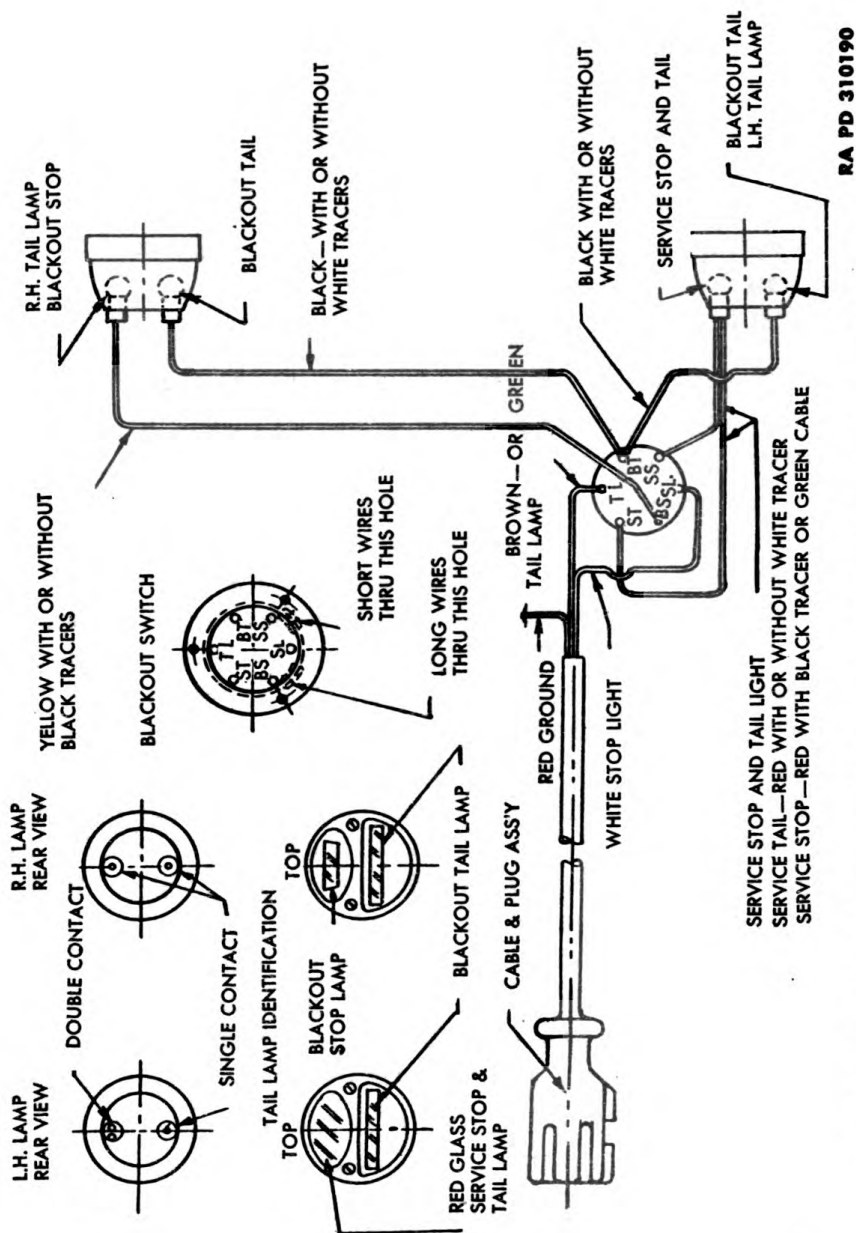
b. **Remove Switch.** Disconnect electric cable and four taillight wires from switch, and remove switch.

37. BLACKOUT SWITCH INSTALLATION.

a. **Steel Body Cargo and Water Tank Trailers.**

(1) **CONNECT BLACKOUT SWITCH WIRES.** Connect electric cable and four taillight wires to switch as follows: Connect brown cable wire to

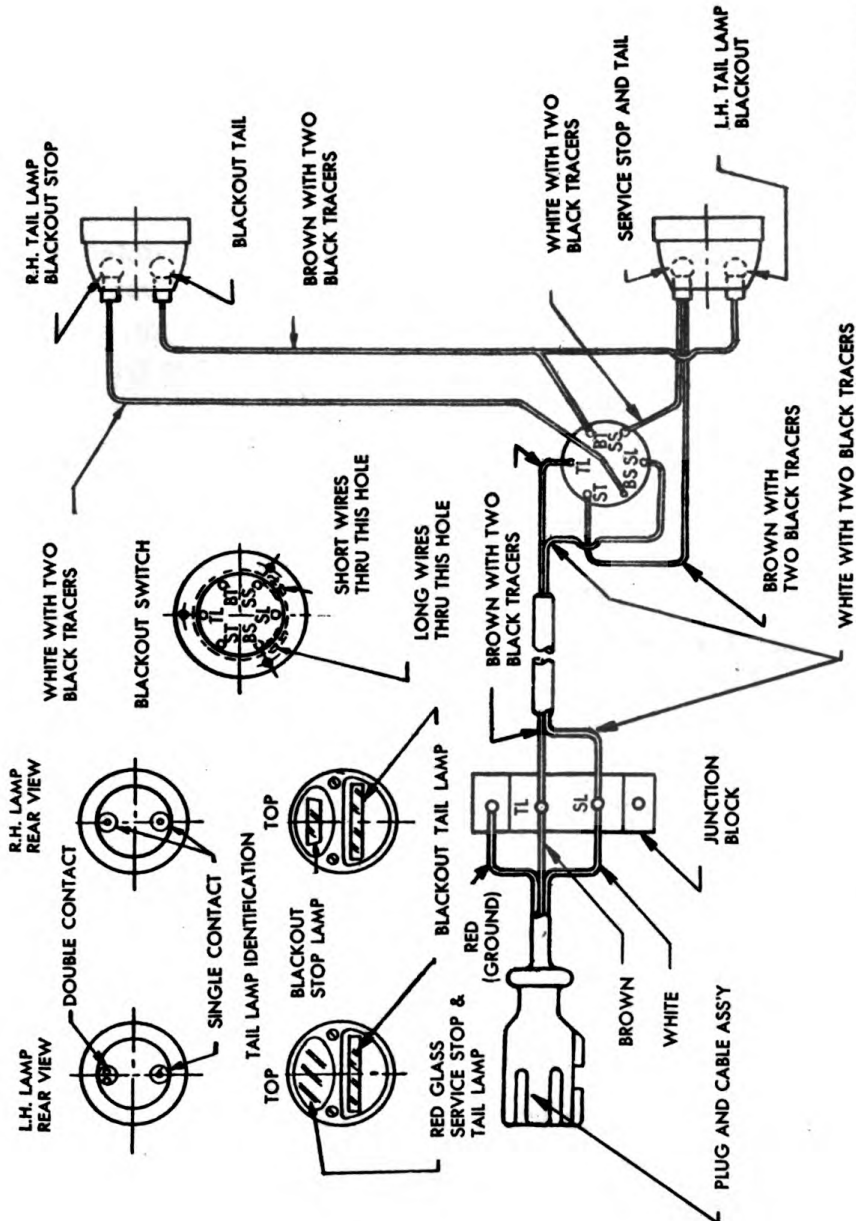
1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 310190

Figure 18—Wiring Diagram—Steel Body Cargo and Water Trailers

LIGHTING SYSTEM



RA PD 310191

Figure 19—Wiring Diagram—Wood Body Cargo Trailers

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

switch tail lamp terminal (TL) and white cable wire to switch stop light terminal (SL). Connect red cable to ground on rail. Connect two black (with or without white tracer) wires to switch blackout terminal (BT). Connect yellow (with or without black tracers) wire to switch blackout service terminal (BS). Connect red (with black tracer) or green wire to service stop switch terminal (SS) and red (with or without white tracer) to switch service tail terminal (ST).

(2) **INSTALL BLACKOUT SWITCH.** Position switch on left side of body so that holes line up, and install bolts, lock washers and nuts. Tighten nuts.

b. Wood Body Cargo Trailer.

(1) **CONNECT BLACKOUT SWITCH WIRES.** Connect wiring harness wires to switch as follows: Brown wire with two black tracers to terminal (TL), white wire with two black tracers to terminal (SL). Connect tail and stop lamp harness wires as follows: Brown wire with two black tracers to terminal (BT), white wire with two black tracers to terminal (BS). Connect service tail lamp cable wires as follows: Brown wire with two black tracers to terminal (ST), white wire with two black tracers to terminal (SS).

(2) **INSTALL BLACKOUT SWITCH.** Refer to paragraph 37 a (2).

38. ELECTRIC CABLE AND PLUG REMOVAL.

a. Disconnect Terminals.

(1) On steel body cargo and water tank trailer remove blackout switch and disconnect wires from terminals (TL) and (SL), also red ground wire from body.

(2) On wood body cargo trailer, disconnect cables at junction block on front sill only.

b. Remove Electric Cable Clips. Remove cap screws, nuts and lock washers which secure cable clips to drawbar and body left side rail. Remove clips.

c. Remove Electric Cable Assembly. Pull out electric cable assembly.

39. ELECTRIC CABLE AND PLUG INSTALLATION.

a. Steel Body and Water Tank Trailers.

(1) **INSTALL ELECTRIC CABLE AND PLUG.** Secure electric cable to body left side rail and drawbar with cable clips, bolts, cap screws, lock washers and nuts. Extend terminal ends through hole in left side of body for switch. Connect wires to switch (par. 37 a (1)).

b. Wood Body Trailers.

(1) **INSTALL ELECTRIC CABLE AND PLUG ASSEMBLY AND WIRING HARNESS.** Install electric cable and plug assembly on drawbar bracket

LIGHTING SYSTEM

and body left side rail with cable clamps. Connect cables to junction block at front sill, as follows: brown wire to junction block terminal (TL); white wire to junction block terminal (SL) and red wire to trailer ground. From junction block run wiring harness to blackout switch. At junction block connect as follows: brown wire with two black tracers to junction block terminal (TL); white wire with two black tracers to junction block terminal (SL).

40. SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT WIRE REMOVAL.

a. **Disconnect Wire Connecting Plugs.** Twist $\frac{1}{8}$ turn right and pull taillight wire connecting plugs out of taillight sockets.

b. **Remove Wire Clips.** Remove cap screws, nuts and lock washers which secure wire clips to body rails. Remove clips.

c. **Remove Blackout Switch** (par. 36).

d. **Disconnect Service and Blackout Taillight and Stop Light Wires.** Disconnect taillight wires from switch and pull taillight wire assembly out of frame. On wood cargo body, remove trailer wire harness.

41. SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT WIRE INSTALLATION.

a. **Connect Taillight Wires to Switch** (par. 37 a (1), b (1)).

b. **Install Blackout Switch.** Refer to paragraph 37 b (2).

c. **Install Service and Blackout Taillight on Stop Light Wire Assembly.** Refer to paragraph 43 a and paragraph 43 b.

d. **Install Taillight Connecting Plugs.** Insert taillight wire connecting plugs into taillight sockets, push and twist $\frac{1}{8}$ turn left.

42. SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT REMOVAL.

a. **Remove Service and Blackout Taillight and Stop Light Assembly.** Twist $\frac{1}{8}$ turn right and pull taillight wire connecting plugs out of light sockets. Remove two nuts and lock washers which secure each light assembly to the taillight brackets and lift off the taillight assembly.

43. SERVICE AND BLACKOUT TAILLIGHT AND STOP LIGHT INSTALLATION.

a. **Steel Cargo Body and Water Tank.** Scrape paint off contacting surfaces of taillight and bracket to ensure proper ground. Line taillight with bracket and install bolts, lock washers and nuts. Attach black wire (with or without white tracer) to bottom of RH light assembly. Attach yellow wire (with or without blackout tracer) to top of RH light. Connect double contact plug (red wire with white tracer) (or green wire) to

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

top of LH light, and single contact plug (black wire with or without white tracer) to bottom of LH light. **NOTE:** LH light has upper ruby lens and lower horizontal blackout stripe. RH light has short upper horizontal blackout stop stripe and a long lower horizontal blackout stripe.

b. **Wood Cargo Body.** Scrape paint off contacting surfaces of taillight and bracket to ensure proper ground. Line light with bracket and install bolts, lock washers and nuts. Attach brown wire (with two black tracers) to bottom of RH taillight. Attach white wire (with two black tracers) to top of RH light. Connect double contact plug (brown and white wires with two black tracers) to top of LH light and single contact plug (brown wire with two black tracers) to bottom of LH taillight. **NOTE:** LH light has upper ruby lens and lower horizontal blackout stripe. RH light has short upper horizontal blackout stop stripe and long lower horizontal blackout stripe.

44. LAMP UNIT REMOVAL.

a. **Remove Service and Blackout Taillight and Stop Light Door.** Remove two screws from taillight door and remove door. Pull sealed lamp unit out of light socket.

45. LAMP UNIT INSTALLATION.

a. **Install New Lamp Unit.** Push new lamp unit into light socket. Install door on taillight and secure with two screws.

Section XIII

TIRES, WHEELS, HUBS, AND WHEEL BEARINGS

	Paragraph
Wheel and tire description and tabulated data	46
Wheel and tire assembly removal	47
Wheel and tire assembly installation	48
Tire assembly removal	49
Tire assembly installation	50
Hub and bearing removal	51
Hub and bearing adjustments	52
Hub and bearing installation	53

46. WHEEL AND TIRE DESCRIPTION AND TABULATED DATA.

a. Description. The wheels are of the pressed-steel ventilated disk type, 20 x 7-inch, 6-hole, 8¾-inch bolt centers, 5⅛-inch disk, offset disk riveted wheel, and type "RH" rim. Each wheel is fastened to its hub by six studs and nuts. The right-hand wheel studs and nuts have right-hand threads, and the left-hand wheel studs and nuts have left-hand threads. The hub is carried on two opposed tapered roller bearing assemblies and is held on the axle by a flat washer, slotted nut and cotter pin. The hub and brake drum are fastened together with six cap screws and self-locking nuts. The tires are 7.50 x 20 inches, 8-ply, and have the mud and snow tread design.

b. Tabulated Data.

(1) WHEELS.

Make Budd & Motor Wheel
 Type Ventilated disk
 Rim R.H. on 20 x 7-in. rim
 Number of studs 6
 Tread 58¾ in.

(2) TIRES.

Size 7.50 x 20 in.
 Number of plies 8
 Air pressure carried 55 lb
 Tread Mud and snow

(3) WHEEL BEARINGS.

Make Timken
 Type Roller

47. WHEEL AND TIRE ASSEMBLY REMOVAL (figs. 20 and 21).

a. Jack Up Trailer. Set parking brakes on trailer. Place jack under trailer and raise until tires clear the ground.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

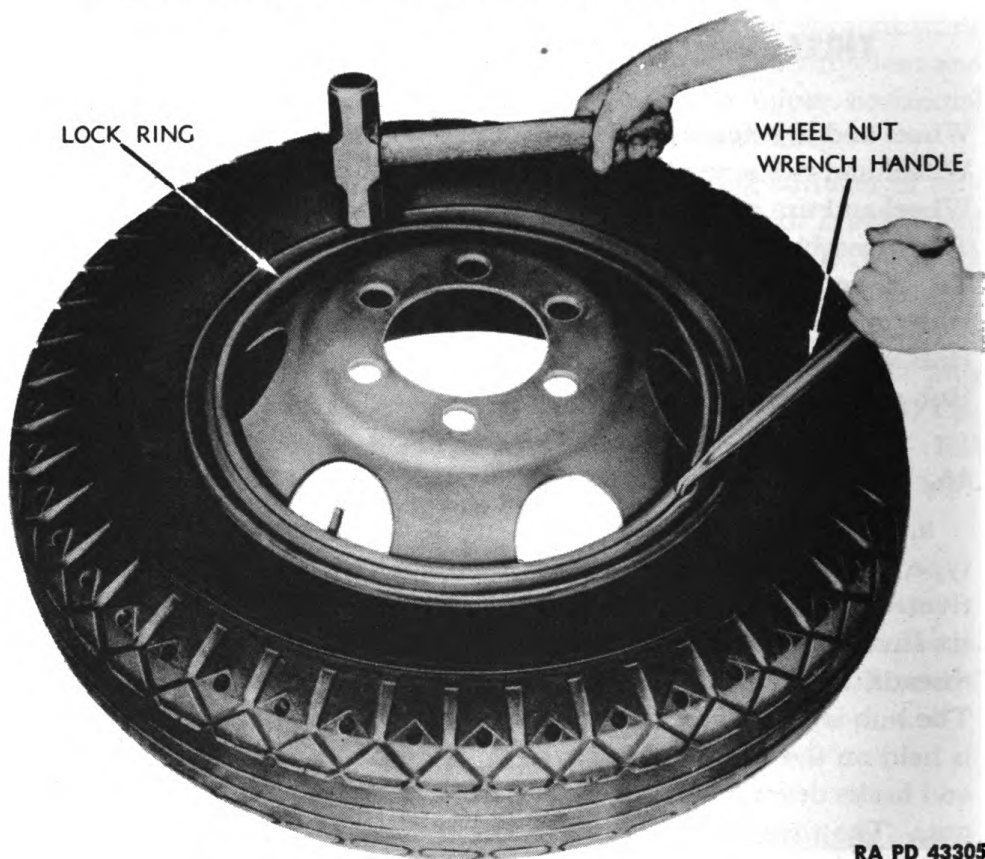


Figure 20—Removing Tire Lock Ring

b. **Remove Wheel and Tire Assembly.** Remove six stud nuts which hold wheel to hub. Remove wheel and tire assembly.

48. WHEEL AND TIRE ASSEMBLY INSTALLATION.

a. **Install Wheel and Tire Assembly.** Mount wheel on hub and install six wheel stud nuts on hub studs. Tighten opposite stud nuts successively to prevent cocking wheel on studs.

49. TIRE ASSEMBLY REMOVAL.

a. **Remove Tire.** Place wheel and tire assembly flat on floor with lock ring up. Remove valve cap. Remove valve core and deflate tire inner tube completely. Insert heavy screwdriver in the slot provided in the lock ring and pry down while tapping the opposite side of the lock ring (fig. 20). Work the lock ring off with the tire irons and remove. Stand the tire on its tread. With hands on outside edge, shove the rim away from the tire with the foot at the edge opposite the valve stem (fig. 21). Pull off the tire so that the valve stem comes straight out. Pull inner tube out of the tire casing.

TIRES, WHEELS, HUBS, AND WHEEL BEARINGS

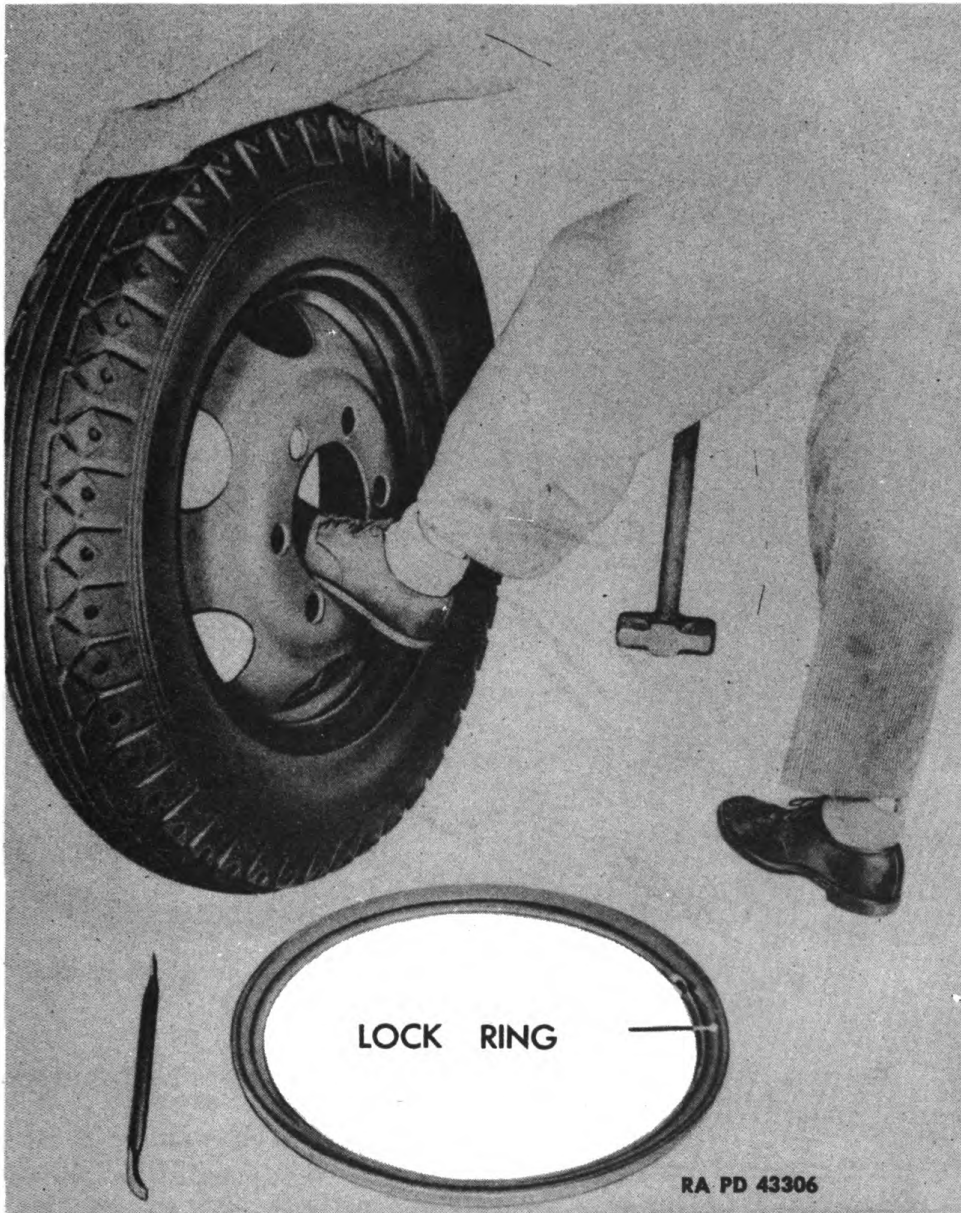


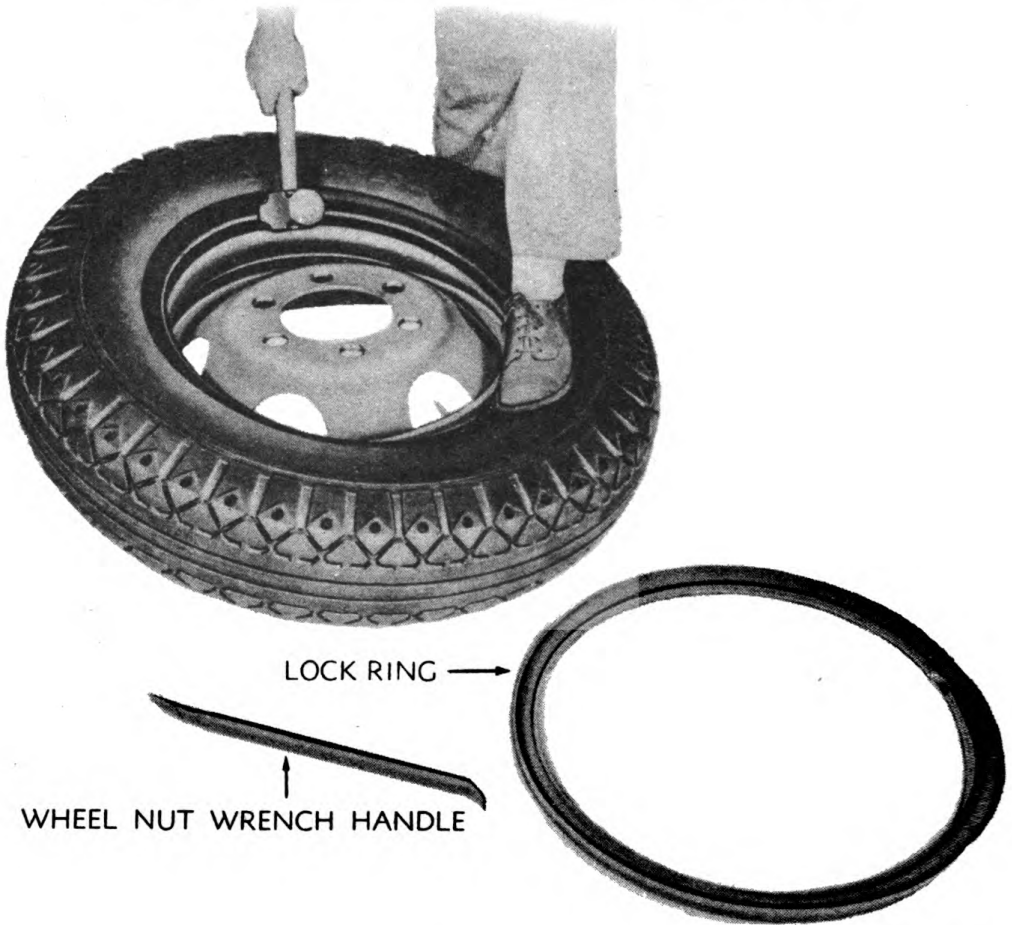
Figure 21—Removing Tire from Wheel

50. TIRE ASSEMBLY INSTALLATION (figs. 22 and 23).

a. **Install Tire.** Insert inner tube into tire and inflate slightly. Place tire assembly on wheel, being careful not to pinch tube. Place wheel ring over wheel with slot towards operator. Force opposite side of ring down under wheel lip, insert spoon iron in slot and pry out and down until ring snaps into place. Inflate tire to correct pressure, 55 pounds.

51. HUB AND BEARING REMOVAL.

a. **Jack Up Trailer.** Set parking brakes on trailer. Place jack under trailer and raise until tires clear the ground.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

RA PD 43307

Figure 22—Installing Tire on Wheel

b. Remove Wheel and Tire Assembly. Remove wheel and tire assembly (par. 47 b).

c. Remove Hub Cap. Unscrew hub cap.

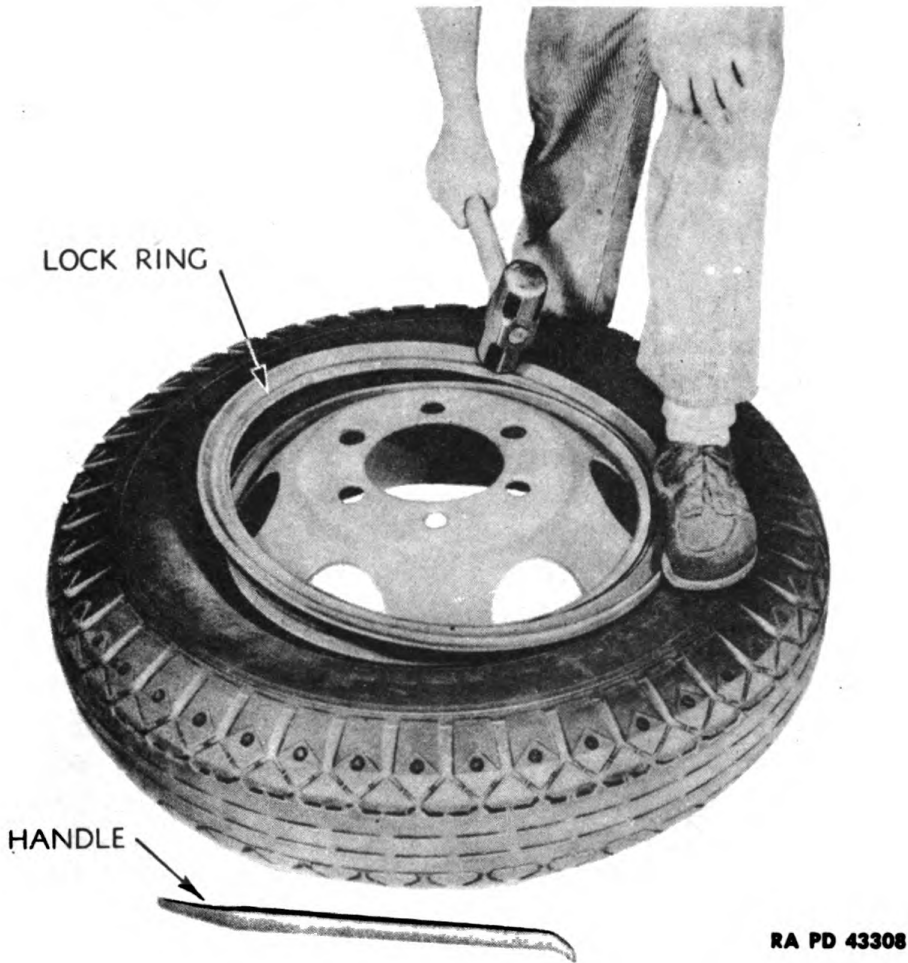
d. Remove Axle Nut and Thrust Washer. Pull cotter pin from axle nut. Unscrew axle nut from axle. Remove axle thrust washer.

e. Remove Hub, Drum, Bearings and Oil Seal Assembly. Pull hub and drum assembly forward and then push assembly back into position again, leaving outer bearing cone free. Pull outer bearing cone off axle spindle and then pull off hub and drum assembly with inner bearing and oil seal.

f. Remove Drum from Hub Assembly. Remove six cap screws, washers and self-locking nuts holding drum to hub. Pry drum away from hub and remove drum.

g. Remove Inner Bearing Cone and Roller Assembly and Oil Seal from Hub. Place wood drift on inside face of bearing cone, and drive out oil seal and bearing.

TIRES, WHEELS, HUBS, AND WHEEL BEARINGS



RA PD 43308

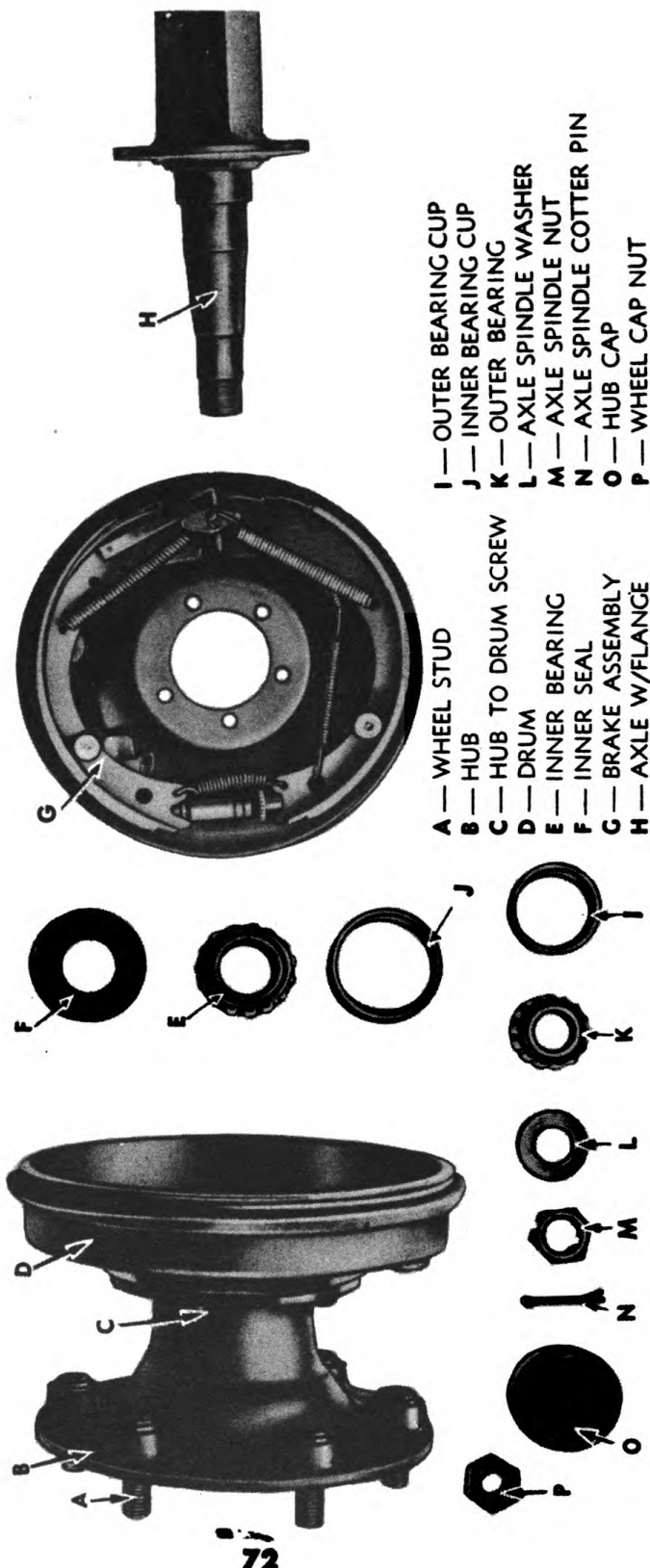
Figure 23—Installing Tire Lock Ring

h. Remove Inner and Outer Bearing Cups from Hub. Place brass drift on inside edge of bearing cup to be removed and hit first one side of the cup and then the other. By alternating in this manner, the cup will come out straight with the bore, and danger of wedging the cup in the bore will be minimized.

52. HUB AND BEARING ADJUSTMENTS.

a. Bearing Adjustment. Jack up trailer until wheel is free of ground. Release the parking brakes fully so that there is absolutely no drag on the brake drums. Remove hub cap. Pull cotter pin from axle nut. Tighten axle nut until a drag is felt on revolving wheel, and then slack off nut until next slot coincides with cotter pin hole in spindle. Test for excessive end play; stand directly in front of wheel, rest one end of wheel hub wrench handle on floor under tire, and lift up on tire. By working wrench handle

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 310192

Figure 24—Axle, Hub, Drum and Brake Assembly—Partially Disassembled

TIRES, WHEELS, HUBS, AND WHEEL BEARINGS

up and down, while holding one finger on outer bearing cone, excessive bearing play may be quickly detected. When adjustment is correct, replace cotter pin in slotted nut and install hub cap, using wheel hub wrench. Lower trailer to ground and remove jack. **NOTE:** Bearings are adjustable for wear, and their satisfactory operation and long life depend on proper adjustment and lubrication.

53. HUB AND BEARING INSTALLATION.

a. Install Bearing Cups. Remove all old grease from inside hub and clean hub bore with dry-cleaning solvent. Dry and place hub on wood block. Start new bearing cup square with the bore, having the smaller inside diameter placed so that it will be on the inside when cup is in place. Place a piece of hardwood over the cup face and drive in cup until flush with outer edge of hub. Place old cup over the new one and drive in new cup until it is absolutely tight with the cup bore flange. Be sure that new cup is properly seated, because if not, it will alter the distance between the bearing centers and prevent proper reassembly of the wheel. Swab the two bearing cups with general purpose grease No. 2.

b. Install Drum. Place drum on hub so that holes in drum line up with holes in hub. Install six cap screws, washers and self-locking nuts. Tighten nuts. Cap screw head to be inside of drum.

c. Install Inner Bearing Cone and Roller Assembly and Oil Seal. Clean inner bearing cone and roller assembly with dry-cleaning solvent. Dry and pack with general purpose grease No. 2. Slide inner bearing cone and roller assembly in bearing cup in hub. Insert oil seal and drive into place with hardwood block over face until flush with rim of hub.

d. Install Hub and Drum Assembly. Remove all old grease from axle spindle and clean spindle with dry-cleaning solvent. Slide hub and drum assembly over spindle and push assembly into position on axle.

e. Install Outer Bearing Cone and Roller Assembly. Clean outer bearing cone and roller assembly. Dry and hand-pack with general purpose grease No. 2. Slide outer bearing cone and roller assembly on axle spindle and install in outer cup of hub.

f. Install Axle Nut and Thrust Washer. Install thrust washer and axle nut on axle spindle. Tighten nut.

g. Install Wheel and Tire Assembly. Install wheel and tire assembly on hub.

h. Adjust Bearings (par. 52 a).

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section XIV

PARKING BRAKES

	Paragraph
Brake description	54
Brake adjustment	55
Brake shoe assembly removal	56
Brake shoe assembly installation	57
Brake cable removal	58
Brake cable installation	59

54. BRAKE DESCRIPTION (fig. 25).

a. **Description.** The brakes are Bendix mechanical 11 x 1 $\frac{3}{4}$ inch, internal expanding, duo-servo equal action, cable controlled. The brake shoes are held in position at the front of the backing plate by the anchor pin and shoe return springs; at the rear by the adjusting screw and spring; and at the top and bottom by the hold-down springs and pins. An eccentric which contacts the upper shoe is used for adjustment and is accessible at the rear of the brake backing plate. The brakes are for parking purposes only, and are operated by a hand lever attached to the right-hand side of body. The brake control cables are connected to a bell crank lever located under the body, and this is connected to the hand lever by means of a clevis and adjusting yoke assembly.

b. **Operation.** When the hand lever is pulled toward rear of trailer, the brake control cables through the bell crank arrangement pull on the cam-operating lever of brake which rotates the arm and cam. The cam spreads the brake shoes apart at the anchor pin and forces them in contact with the brake drums. When the hand lever is released, the shoe return springs pull the shoes away from the drum, and the cam arm spring pulls the cam arm into its neutral position.

55. BRAKE ADJUSTMENT.

a. **Adjust Brakes.**

- (1) Jack up both wheels.
- (2) Remove brake cable clevis pins and disconnect cable clevises from bell crank lever.
- (3) Loosen eccentric lock nuts on rear of backing plate one-half turn.
- (4) Turn flat-ended eccentric studs in direction of forward wheel rotation until drag is felt when wheels are rotated by hand. Back off until wheels are just free. Tighten eccentric lock nuts.
- (5) Remove adjustment opening cover plates.

PARKING BRAKES

(6) Expand brake shoes by tightening brake shoe adjusting screws. Insert brake screwdriver through backing plate. Move handle end of screwdriver toward center of wheels until wheels drag.

(7) With brake lever pawl in first ratchet notch, pull brake cables until all slack is removed. Adjust cable clevis adjusting nuts until cable clevis pin holes line up with holes in bell crank lever. Insert clevis pins. Insert and spread cotter pins. Tighten cable clevis adjusting nuts.

(8) Loosen brake shoe adjusting screws until trailer wheels are just free from drag.

(9) Apply brake lever until trailer wheel with least drag can just be turned by hand. Loosen brake shoe adjusting screw on tighter wheel until drag on wheels is equal.

(10) Return lever to released position.

(11) Install adjusting screw opening cover plates.

(12) Lower trailer, and remove jack.

56. BRAKE SHOE ASSEMBLY REMOVAL.

a. **Jack Up Trailer.** Place jack under trailer and raise until tires clear ground.

b. **Remove Hub Cap and Axle Nut** (par. 51 c, d).

c. **Remove Wheel, Hub, and Brake Drum Assembly.** Pull wheel, hub and brake drum assembly, as a unit, off axle (par. 51 e).

d. **Remove Brake Cable Clevises.** Remove cotter pins from brake cable clevis pins. Push out clevis pins and pull brake cable clevises from bell crank lever.

e. **Remove Springs.** Remove cam lever spring (black) shoe anchor springs (red and blue) and adjusting screw spring (black).

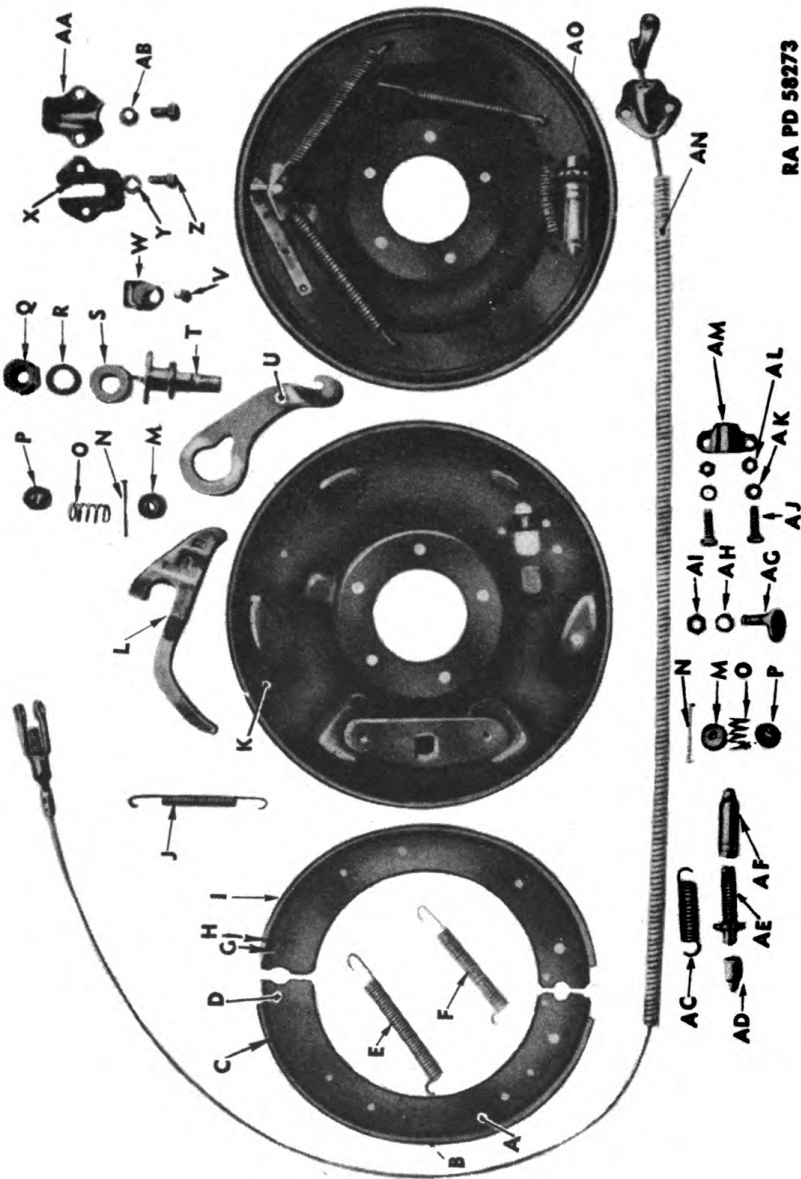
f. **Remove Shoe Hold-down Spring and Pin.** Push down hold-down spring cups, twist cups 90 degrees, and remove cups, spring and pin.

g. **Remove Brake Shoe Assemblies.** Lift out brake shoe assemblies and adjusting screw. **NOTE:** Clean all brake parts removed with dry-cleaning solvent. Inspect and discard those parts which are worn or broken. Apply cable lubricant to all moving parts at frictional contact points; also clean exposed portion of cable and then pull cables through conduits from both ends to expose that portion of cable which is sheathed by conduit. Clean this portion of cable and lubricate freely with cable lubricant.

57. BRAKE SHOE ASSEMBLY INSTALLATION.

a. **Install Brake Shoe Assembly.** Insert shoe hold-down spring pins into backing plate holes. Install brake shoes over pins and mount adjusting screw on brake shoes. Place brake shoes and adjusting screw in posi-

1-TON, 2-WHEEL CARGO AND WATER TRAILERS



RA PD 58273

Figure 25—Brake Assembly

PARKING BRAKES

A — LINING RIVET	M — CENTRALIZING CUP	AC — ADJUSTING SCREW SPRING (BLACK)
B — SECONDARY LINING	N — SHOE HGLD DOWN SPRING PIN	AD — ADJUSTING SCREW SOCKET
C — SECONDARY SHOE	O — SHOE HOLD DOWN SPRING (BLUE)	AE — ADJUSTING SCREW
D — SECONDARY SHOE AND LINING ASSEMBLY	P — SHOE HOLD DOWN SPRING CUP	AF — ADJUSTING SCREW PIVOT NUT
E — ANCHOR TO SHOE SPRING, LEVER SIDE (BLUE)	Q — ANCHOR PIN NUT	AG — ECCENTRIC ASSEMBLY
F — ANCHOR TO SHOE SPRING (RED)	R — ANCHOR PIN LOCK WASHER	AH — ECCENTRIC LOCK WASHER
G — PRIMARY SHOE LINING ASSEMBLY	S — ANCHOR PIN PLATE WASHER	AI — ECCENTRIC NUT
H — PRIMARY SHOE	T — ANCHOR PIN AND SHOE GUIDE	AJ — CONDUIT BRACKET SCREW
I — PRIMARY LINING	U — OPERATING CAM LEVER	AK — CONDUIT BRACKET LOCK WASHER
J — ACTUATING CAM ARM TO SHOE SPRING (BLACK)	V — INSPECTION HOLE COVER SCREW	AL — CONDUIT BRACKET NUT
K — BACKING PLATE	W — INSPECTION HOLE COVER	AM — CONDUIT BRACKET
L — SHOE ACTUATING CAM AND ARM	X — CONDUIT BRACKET SEAL	AN — CABLE AND CONDUIT ASSEMBLY
	Y — BRACKET SCREW LOCK WASHER	AO — BRAKE ASSEMBLY
	Z — BRACKET SCREW	
	AA — CABLE CONDUIT BRACKET	
	AB — BRACKET SCREW NUT	

RA PD 58273B

Legend for Fig. 25—Brake Assembly

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

tion so that notched wheel of adjusting screw is in front of backing plate adjustment opening.

b. **Install Brake Shoe Hold-down Cup and Spring.** Place cups on hold-down spring pin, push down, and twist cups 90 degrees, locking them in position.

c. **Install Adjusting Screw, Anchor and Cam Springs.** Install adjusting screw spring, anchor springs and cam lever spring. The secondary shoe return spring (red) must always be attached to the shoe which hides the cam operating lever.

d. **Install Wheel, Hub and Brake Drum Assembly.** Same procedure as in paragraph 53 d, e.

e. **Install Axle Nut and Washer.** Same procedure as in paragraph 53 f.

f. **Adjust Bearings.** Same procedure as in paragraph 52 a.

g. **Adjust Brakes.** Remove cover plates and brake drum inspection hole covers. Loosen anchor pin nuts one turn. The upper or secondary shoe should have a clearance at each end of 0.010 inch (0.010-in. feeler gage). To obtain this, tap anchor pin toward or away from center of wheel until clearance is equal. Lock anchor pin nut securely. Adjust eccentric until clearance is 0.010 inch. Lock eccentric lock nut. Expand shoes against drum by means of adjusting screws until wheels drag. Place lever pawl in first ratchet notch and pull cables until all slack is removed. Adjust both cable clevises and insert clevis pins. Insert and spread cotter pins. Tighten cable clevis clamp nuts. Loosen adjusting screws until wheels are just free from drag. Apply brake lever until wheel with least drag can just be turned by hand. Loosen adjusting screw on tighter wheel until drag on wheels is equal. Return lever to released position. Install adjustment opening cover plates and brake drum inspection hole covers. Lower trailer and remove jack. Also paragraph 55 a and paragraph 27 a (20).

58. BRAKE CABLE REMOVAL.

a. **Jack Up Trailer.** Jack up trailer until wheels are free of ground.

b. **Disconnect Cable Clevises.** Remove cotter pins and clevis pins that attach cable clevises to bell crank lever.

c. **Remove Cable Support Brackets.** Remove nuts and cap screws which secure cable conduit support brackets to under side of body. Remove support brackets.

d. **Remove Wheel and Hub Assembly.** Follow procedure in paragraph 51 e.

e. **Remove Brake Shoes.** Follow procedure in paragraph 56 d, e, f, g.

f. **Remove Cable and Conduit Assembly.** Unscrew cap screws on rear of backing plate and remove lock washers, cable conduit bracket and bracket seal.

PARKING BRAKES

(1) Unhook cable from operating cam lever and pull cable and conduit assembly out of backing plate.

59. BRAKE CABLE INSTALLATION.

a. **Connect Cable and Conduit Assembly.** Insert cable and conduit assembly through hole in backing plate. Connect cable to operating cam lever. Line up cable conduit bracket and bracket seal and insert cap screw and lock washer in backing plate. See that cable conduit is in proper place and tighten cap screw.

b. **Install Brake Shoes.** Follow procedure in paragraph 57 a, b, c.

c. **Install Wheel and Hub Assembly.** Follow procedure in paragraph 53 d, e.

d. **Install Cable Support Brackets.** Install brake cable and conduit support brackets (par. 27 a (19)).

e. **Connect Cable Clevises.** Install cable clevises on bell crank lever and insert clevis pins. Install and spread cotter pins.

f. **Adjust Brake Cables.** Adjust brake cables and brakes (par. 57 g).

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

Section XV

AXLE AND SPRINGS

	Paragraph
Description	60
Axle removal	61
Axle installation	62
Spring assembly removal.....	63
Spring assembly installation.....	64

60. DESCRIPTION.

a. The trailer combination body and frame is carried on the axle through semi-elliptical type springs. The springs are held to the axle by means of tie plate and bolt assemblies.

b. The axle is of one-piece construction, having brake flanges welded into position.

c. The main springs are of the semi-elliptical type and have 10 leaves. The top leaf of each spring has an eye formed at each end. The second leaf is also wrapped around front end eye of each spring as a safety measure in the event the top leaf should break. Bronze bushings are pressed into the eye at each end as a bearing for the shackle bolt and spring bolt. The springs are shackled at the rear. Center of springs are held to the axle by hold-down plate and bolt assemblies (fig. 26).

61. AXLE REMOVAL.

a. **Block Up Body** (par. 26 a (1)).

b. **Remove Lubrication Fittings** (par. 26 a (2)).

c. **Disconnect Brake Control Cables.** Disconnect brake control cables from bell crank lever (par. 26 a (3)).

d. **Remove Spring Hanger Bolts** (par. 26 a (5)).

e. **Remove Axle, Spring, Wheel and Tire Assembly.** Lower axle, spring, tire and wheel assembly as a unit to ground and roll out from under body.

f. **Remove Spring Assembly.** Remove four nuts from spring to axle bolts. Tap lower tie plate off bolts and remove. Lift bumper plate and four bolts off spring and axle. Lift spring off axle and lower spring to ground.

g. **Remove Hub Cap.** Unscrew hub cap from axle spindle.

h. **Remove Axle Nut and Thrust Washer** (par. 51 c, d).

i. **Remove Wheel and Tire Assembly** (par. 47 b).

j. **Remove Hub and Bearing Assembly** (par. 51 e).

AXLE AND SPRINGS

- A — SPRING BUSHING
- B — NUMBER 1 SPRING LEAF
- C — NUMBER 2 SPRING LEAF
- D — REBOUND CLIP
- E — CLIP, BOLT AND NUT
- F — TENSION PLATE
- G — BOLT SPRING TO AXLE
- H — SPRING BOLT TIE PLATE
- I — BRAKE CABLE CONDUIT
- J — SPRING ASSEMBLY
- K — BRAKE CABLE CLEVIS
- L — SPRING PLATE ASSEMBLY
- M — DRUM
- N — BRAKE BACKING PLATE
- O — BACKING PLATE AXLE FLANGE
- P — TIRE
- Q — WHEEL AND RING ASSEMBLY
- R — ANCHOR PIN AND GUIDE
- S — SPRING TO AXLE BOLT NUT
- T — AXLE

RA PD 58272

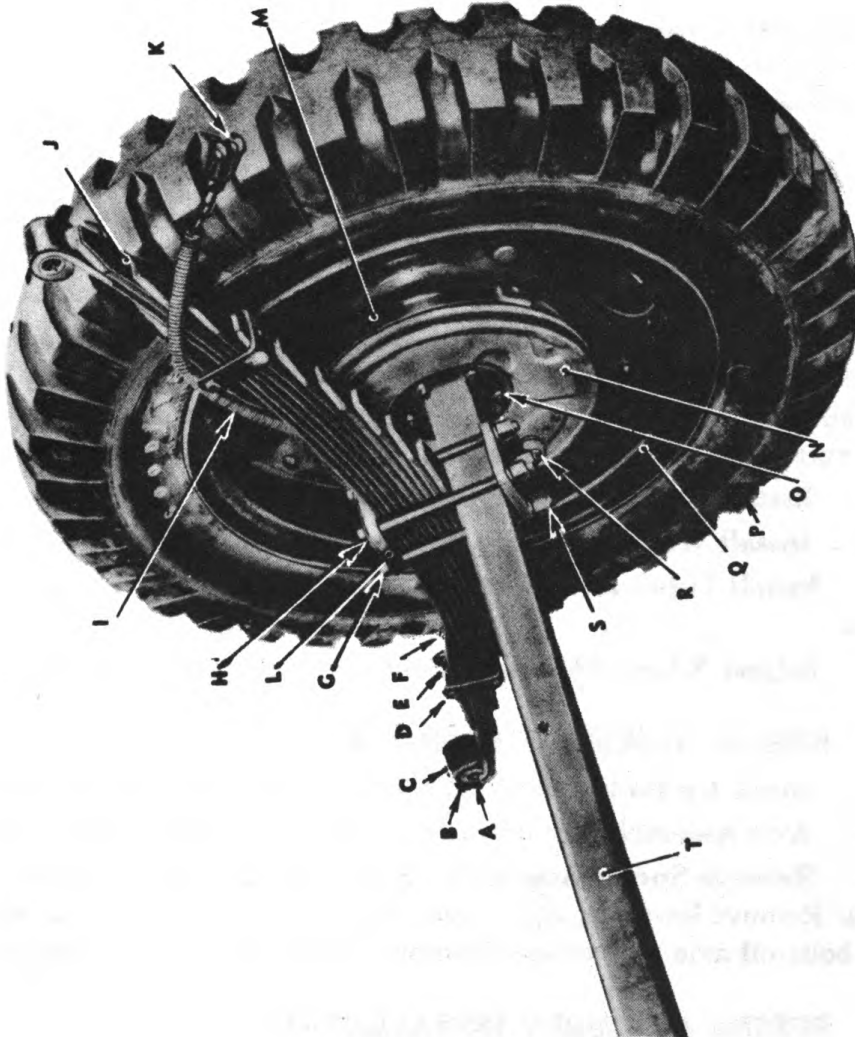


Figure 26—Axle and Spring Assembly with Wheel and Tire

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

k. **Remove Backing Plate.** Remove five cap screw nuts and lock washers from backing plate. Remove five cap screws. Pry backing plate away from axle flange and pull backing plate off axle. Lower axle to the ground.

62. AXLE INSTALLATION.

a. **Install Backing Plate.** Slide backing plate onto axle and position on axle flange so that holes line up. Install five cap screws, lock washers and nuts. Tighten nuts alternately, and evenly.

b. **Install Hub and Bearing Assembly.** Slide hub assembly onto axle spindle, and push into position on axle.

c. **Install Axle Nut.** Install washer and slotted nut on axle spindle.

d. **Install Spring Assemblies on Axle.** Place the springs in a parallel and upside-down position so that spring eyes rest on the ground. Place the axle assembled with backing plates and hubs upon the springs so that brake cables extend in an opposite direction from wrap-around spring eye end, and line up in position.

e. **Install Spring Tie Plate Assembly.** Install upper spring tie plate and four hold-down bolts over spring and axle with plate at bottom. Install lower spring tie plate on hold-down bolts and position against axle. Install nuts on hold-down bolts. Tighten nuts and center punch (hammer and center punch) bolt threads at the nuts.

f. **Install Axle and Spring Assembly.** Place the axle and spring assembly under the trailer with the wrap-around spring eyes to the front of trailer. Insert the front spring eyes in the front spring hangers and the rear spring eyes into the spring shackles.

g. **Install Spring Hanger Bolts** (par. 27 a (15)).

h. **Install Wheel and Tire Assemblies** (par. 48 a).

i. **Install Lubrication Fittings.** Install lubrication fittings in spring bolts.

j. **Adjust Wheel Bearings.** Follow procedure in paragraph 52 a.

63. SPRING ASSEMBLY REMOVAL.

a. **Block Up Body.** Block up body until tension on spring is relieved.

b. **Axle Assembly.** Follow procedure in paragraph 61 b, c, d, e.

c. **Remove Spring Assembly.** Remove four nuts from spring to axle bolts. Remove lower spring tie bolt plate. Lift spring upper tie bolt plate and bolts off axle and spring. Remove and lower spring to ground.

64. SPRING ASSEMBLY INSTALLATION.

a. **Install Spring Assembly.** Position spring on axle with wrap-around spring eye to front of trailer. Install upper tie bolt plate and bolts.

AXLE AND SPRINGS

Install lower tie bolt plate on bolts. Install nuts on bolts. Tighten nuts and center punch bolt threads at the nuts.

b. **Lower Body.** Remove blocking and lower body until spring hangers straddle spring ends.

c. **Install Spring Hanger Bolts.** Line up spring and install spring and lower shackle bolts (par. 27 a (15)).

d. **Install Lubrication Fittings.** Install lubrication fittings in spring and shackle bolts. Lubricate bolts through fittings. Refer to section VI.

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

REFERENCES

STANDARD NOMENCLATURE LISTS.

- Trailer, 1-ton payload, 2-wheel cargo **SNL G-518**
- Trailer, 1-ton payload, 2-wheel, water tank, 250-gal. . . **SNL G-527**
- Cleaning, preserving and lubricating materials, recoil
fluids, special oils, and miscellaneous related items. **SNL K-1**
- Soldering, brazing, and welding materials, gases and
related items **SNL K-2**
- Tools, maintenance, for the repair of automotive
vehicles **SNL G-27**
- Tool sets—motor transport. **SNL N-19**
- Tool sets for ordnance service command, automotive
shops **SNL N-30**
- Current Standard Nomenclature Lists are listed above.
- An up-to-date list of SNL's is maintained as the
"Ordnance Publications for Supply Index" **OPSI**

EXPLANATORY PUBLICATIONS.

- Military motor vehicles **AR 850-15**

Automotive Materiel.

- Automotive electricity **TM 10-580**
- Electric fundamentals **TM 10-455**
- The motor vehicle **TM 10-510**
- Chassis, body, and trailer units **TM 10-550**

Maintenance and Repair.

- Echelon system of maintenance **TM 10-525**
- Maintenance and repair **TM 10-520**
- Ordnance maintenance procedure **TM 9-1100**
- Automotive lubrication **TM 10-540**
- Motor transport inspections **TM 10-545**
- Tire repair and retread **TM 9-1868**
- Cleaning, preserving, lubricating and welding materials
and similar items issued by the ordnance **TM 9-850**

- Detailed lubrication instructions for ordnance
materiel **OFSB 6-series**

Protection of Materiel.

- Fire prevention, safety precautions, accidents **TM 10-360**
- Explosives and demolitions **FM 5-25**
- Defense against chemical attack **FM 21-40**
- Decontamination of Armored Force vehicles **FM 17-59**
- Chemical decontamination, materials and equipment. **TM 3-220**

REFERENCES

- List of Publications for Training FM 21-6**
Storage and Shipment.
Registration of motor vehicles AR 850-10
Storage of motor vehicle equipment AR 850-18
Ordnance storage and shipment chart, group G—
Major items OSSC-G

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

INDEX

A	Page No.		Page No.
Adjustments		steel body cargo trailer.....	43
brake cables and brakes.....	54, 74, 78	vehicle	3
hub and bearings.....	71	water trailer	43
Allocation of maintenance.....	24	wheels and tires.....	67
steel body cargo trailer.....	25, 26, 27	wood body cargo trailer.....	43
water tank trailer.....	29	Differences among models.....	3
wood body cargo trailer.....	27, 28	Drawbar and parking wheel	
Assembling		description and operation.....	56
drawbar	59	drawbar assembling.....	59
parking wheel, fork and quadrant..	60	drawbar disassembling.....	56
Axle and springs		drawbar removal.....	56
axle installation	82		
axle removal.....	80	E	
description	80	Explanatory publications	84
spring assembly installation.....	82	automotive materiel	84
spring assembly removal.....	82	list of publications for training....	85
Axle springs		maintenance and repair.....	84
installation	82	protection of materiel.....	84
removal	82	storage and shipment.....	85
B		I	
Backing plate		Information on controls	
installation	82	blackout switch	13
removal	82	parking brake.....	13
Body and frame assembly		parking wheel.....	13
body description.....	43	plug and cable.....	13
rack and tarpaulin.....	43	Inspection and preventive	
steel body cargo trailer.....	43	maintenance services	
water trailer.....	43	after-operation and weekly.....	20
wood body cargo trailer.....	43	at-halt	19
installation of body and frame		before-operation	17
assembly components.....	52	during-operation	18
steel and wood body cargo trailer	52	purpose	16
water trailer.....	55	Installation	
removal of body and frame		axle	82
assembly components.....	48	backing plate.....	82
steel and wood body cargo trailer	48	blackout switch	61
water trailer.....	50	body and frame assembly	
Brakes, parking, operation of.....	74	components	52
		brake cable.....	79
D		brake shoe assembly.....	75
Data on vehicle.....	9-12	drawbar rails.....	59
Data on wheels and tires.....	67	electric cable and plug.....	64
Description		hub and bearing.....	73
axle and springs.....	80	lamp unit	66
brakes	74	lunette	59
drawbar and parking wheel.....	56	parking wheel assembly.....	59
lighting system.....	61	parking wheel fork and quadrant..	60
rack and tarpaulin.....	43	quadrant on fork.....	60
		safety chains.....	59

1-TON, 2-WHEEL CARGO AND WATER TRAILERS

R	Page No.		Page No.
References	84, 85	drawbar bolts.....	51, 56
Removal		drawbar U-bolts.....	51
axle	80	electric cable and plug assembly	51
backing plate.....	82	fenders and fender aprons.....	51
blackout switch.....	61	lubrication fittings.....	50
body and frame assembly		reflectors	51
components	48-50	service and blackout taillight	
brake shoe assembly.....	75	and stop light assemblies.....	51
brake cable.....	78	service and blackout taillight	
drawbar rails.....	59	and stop light bracket.....	51
electric cable and plug.....	64	service and blackout taillight	
electric cable clips.....	64	and stop light wire assemblies.	51
hub and bearings.....	69	spring hanger bolts.....	50
lamp unit	66	tank cover and hinge.....	51
lunette	59	tank cover wing nut and eyebolt	51
parking wheel, fork and quadrant..	59	volute bumper spring assemblies	51
parking wheel fork from		wheel and tire assembly.....	67, 68
quadrant and wheel.....	59		
safety chains	56	S	
service and blackout taillight		Scope of maintenance allocation....	24
and stop light.....	65	Scope of manual.....	2
service and blackout taillight		Standard nomenclature lists.....	84
and stop light wire.....	65	Steel body cargo trailer	
spring assembly.....	82	allocation of maintenance.....	25
steel and wood body cargo trailer..	48	description of body.....	43
axle and spring assembly.....	48	lighting system.....	61
blackout switch cargo body		loading	14
and tank body.....	48		
brake bell crank lever.....	48	T	
brake operating lever.....	50	Tarpaulin installation.....	14
drawbar and parking wheel		Tires, wheels, hubs, and wheel	
assembly	49, 56	bearings	67
drawbar bolts.....	49	hub and bearing adjustments.....	71
drawbar U-bolts.....	49	hub and bearing installation.....	73
fenders	49	hub and bearing removal.....	69
lubrication fittings.....	48	tire assembly installation.....	69
reflectors	50	tire assembly removal.....	68
service and blackout trailer		wheel and tire assembly installation	68
and stop light assemblies.....	49	wheel and tire assembly removal..	67
service and blackout taillight		wheels and tires	
and stop light bracket.....	50	description	67
spring hanger bolts.....	48	tabulated data.....	67
tail gate assembly.....	50	Trouble shooting	
volute bumper spring assemblies	50	axles and springs.....	41
water trailer		body and frame assembly (cargo	
axle and spring assembly.....	50	and water trailer).....	38
blackout switch.....	50	drawbar and parking wheel.....	39
brake bell crank lever.....	50	lighting system	40
brake control cables.....	50	parking brakes.....	41
brake operating lever.....	51	tires, wheels, hubs and wheel	
drawbar and parking wheel		bearings	40
assembly	51, 56		

INDEX

W	Page No.		Page No.
Water tank trailer		Wood body cargo trailer	
allocation of maintenance.....	29	allocation of maintenance.....	27
description of body.....	43	description of body.....	43
loading	14	lighting system.....	61
Wheel and tire assembly.....	67	loading	14

NOTES

